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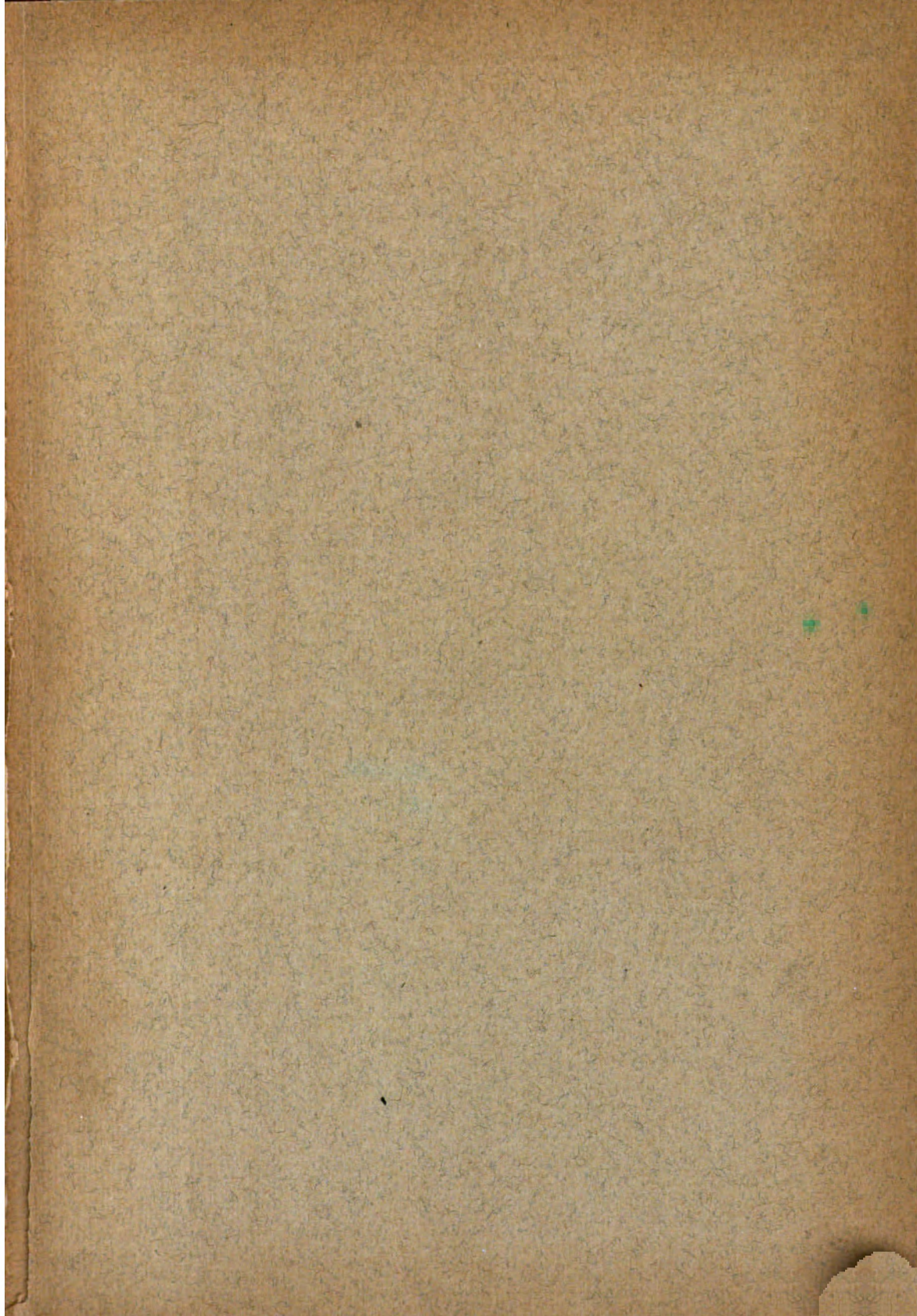
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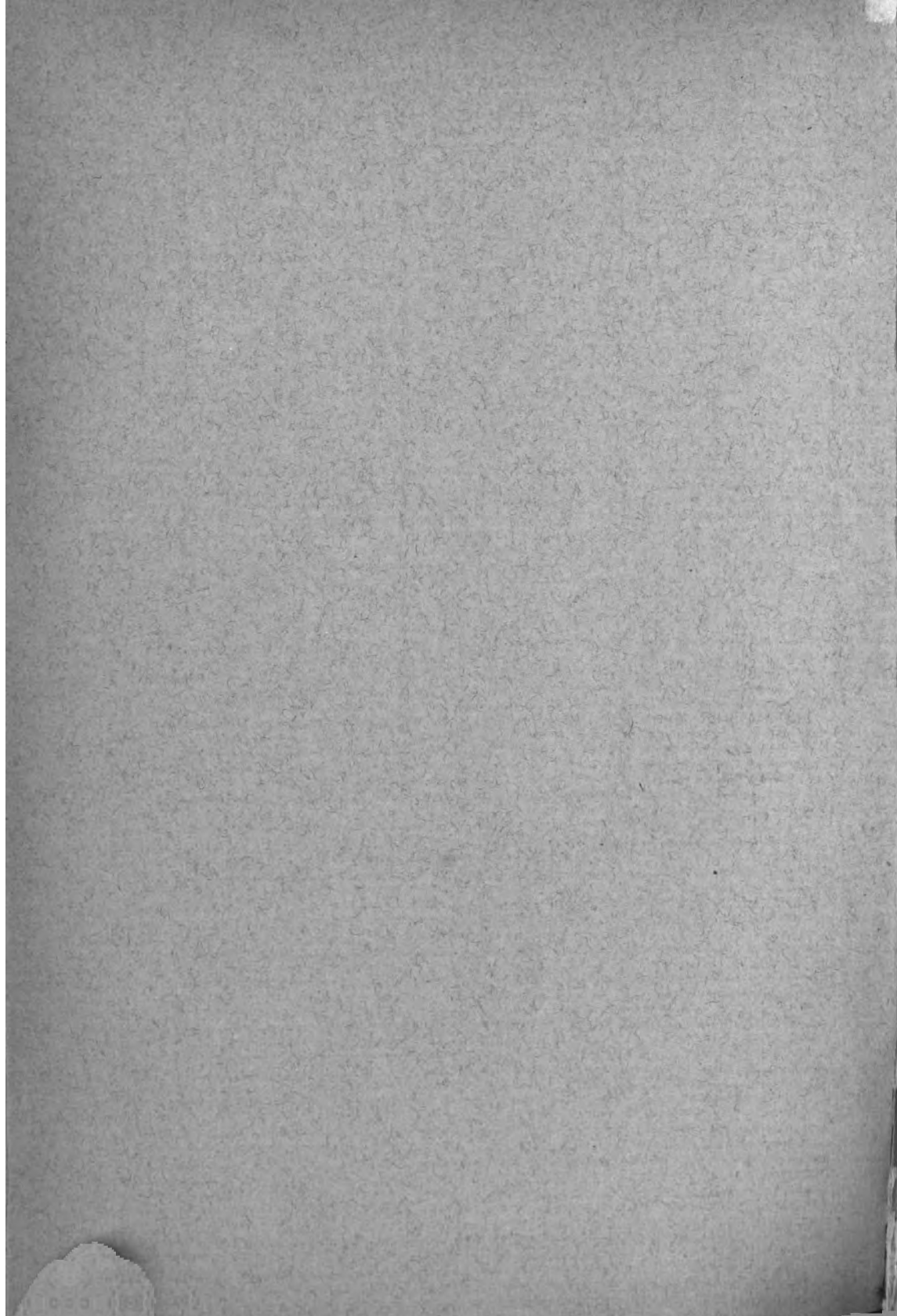
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A STUDY OF KORSAKOFF'S DISEASE.*

From the Moscow Psychiatric Clinic.

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Fifteen years ago Korsakoff published his first works on the disease designated by him as polyneuritic psychosis, called to-day Korsakoff's disease. Various authors have since published a considerable number of cases of this disease. We shall try and give here a short historical sketch of the literature on this question.

Korsakoff was the first to give a description of "polyneuritic psychosis" or "cerebropathia psychica toxæmica." Then followed a series of publications on the subject by Russian physicians, who thoroughly established the truth of Korsakoff's conceptions of this disease. They confirmed his views that the disease was an individual one, characteristic of itself, and was accompanied by a peculiar and constant psychic condition; the main features of the psychic disturbance were admitted by all to consist of an impaired memory known as amnesia. It was admitted by all that the most characteristic trait of this impairment consisted of pseudo-remiscences. S. S. Korsakoff published five contributions to the study of this subject in the current medical press; one of these was published in collaboration with Dr. Wl. Serbski. The most detailed study of the subject is to be found in Korsakoff's celebrated thesis, entitled "Alcoholic Paralysis." A number of clinical illustrations are cited there. Besides, Korsakoff also published three contributions in the German medical journals and two in the French. One of the latter contributions was presented as a report at the International Medical Congress of 1900, held in Paris. As has been remarked, Korsakoff was the first psychiatrist to call attention to the disease and he also published the largest number of studies on the subject. The disease is, therefore, known as

*Simultaneous publication in the *Journal S. S. Korsakova*.

Korsakoff's disease. The mere fact that Korsakoff's writings on this disease brought forth such an extensive number of studies of the same shows that his clinical observations were complete and thorough.

All Russian authors agreed that Korsakoff's description of the affection was complete and accepted it as an independent disease. Among these authors are included Drs. Tiling, who published his work in German; Vaindrach, Doubrovine, Kishkine, Soukhanoff, Statevich, Trapeznikoff, Virouboff, Kojevnikoff, Rachmaninoff, Erlizkoff and Ribalkine. Recently, Dr. Soukhanoff described in French a case of Korsakoff's disease that followed an attack of typhoid fever; in this case there was no history of alcoholism. Among the other cases the disease was stated to have occurred under various circumstances as follows: After childbirth and in connection with parametritis and gastro-enteritis; after typhoid fever and in connection with alcoholism; three cases of the disease occurred after an attack of jaundice; fourteen cases of various origins, described in collaboration with Orloff and Chelzoff; one case followed an attack of pyemia; alcoholism was the cause in another case, the patient dying of cancer; five cases of alcoholic nature, with autopsies; two cases in connection with alcoholic paralysis; finally, one case was due to arsenical poisoning.

At first, Korsakoff's ideas on this affection met with indifference of the medical world. The French physicians were the first to fall in line with the Russian physicians in the endorsement of his ideas. In 1889, Souques published an article in the *Revue Philosophique*, in which he agreed with Korsakoff's ideas regarding the main psychic symptom in chronic alcoholism, the amnesia, but he did not accept the general disease, polyneuritic psychosis, as an independent disease. Babinski (1), without giving personal observations in support of his views, said that the term "polyneuritic psychosis" was not a convenient one, because the psychic disturbances in such cases did not depend on lesions of the nerve trunks. He did not accept the statement made by the author that a careful investigation of these cases showed that there was a correlation between the nervous lesions and the psychic manifestations. He preferred the term "cerebropathia psychica toxæmica," as applied to the disease in question, because the presence of neuritis was not a necessary manifestation under these limitations. To justify his substitution of the above term, Babinski argued as follows: "We are justified in supposing that some agents that are apt to cause polyneuritis may also cause psychic disturbances of a special nature at one and the same time; these psychic disturbances may be of a special nature and their co-existence with the polyneuritis may be simply

a coincidence. It would not be right to affirm, therefore, that the polyneuritis is a necessary accompaniment of the special psychic disturbances." Babinski is further inclined to class polyneuritic psychosis with mental confusion; finally, according to him, it is wrong to bring all psychic disturbances with polyneuritis under the heading of cerebropathia psychica toxæmica; this latter disease may be seen with a psychosis of an entirely different nature, such as hysteria, for instance.

In 1894, Dr. Regis said in his report to the congress of French neurologists and psychiatrists that polyneuritic psychosis was at times a combined disease, consisting of polyneuritis and a psychosis, and that at others it could be manifested by only one of these troubles; that the nervous and psychic manifestations were independent phenomena due to one and the same cause. He then cited a case in support of this view, but his case was not one of polyneuritic psychosis; it was simply one of a psychosis subsequent to diphtheria and measles, and in which polyneuritis appeared eight months later. Such a case does not at all correspond to Korsakoff's disease and cannot be used correctly for the demonstration as above related.

In 1894, another work appeared in France, which aimed to demonstrate that Korsakoff's disease was not an individual one, whether considered from its clinical or anatomo-pathological side. The author of the above work was Dr. Haury, and the work was written under the direction of Pierret.

In 1895, two more French authors added their contributions to the study of Korsakoff's disease. These authors were Paul Sollier and Séglas. Sollier agreed perfectly with Korsakoff's delineation of the disease and cited a personal observation of the disease. Séglas, on the contrary, stated in one of his lectures that in polyneuritic psychosis the psychic disturbance was not pathognomonic of the disease, but was an accidental accompaniment of it.

In 1896 Professor Raymond delivered a lecture on "Alcoholic Polyneuritis with Amnesia" and presented a case of this disease. He said that the psychic disturbance, in alcoholic polyneuritis, could appear in three forms: 1, delusional; 2, psychic enfeeblement, and 3, in the form of amnesia. The latter could be combined with either of the two preceding ones and is often curable. Apparently, when making this last remark, Raymond had in view slight forms of polyneuritic amnesia. He agreed that similar psychic disturbance could be found in cases other than alcoholic polyneuritis. He finally concluded his lecture by saying that various diseases were confounded under the term of polyneuritic psychosis.

In 1898, after Soukhanoff's publications had appeared, Lepine



published two cases of "alcoholic polyneuritis with psychosis." He used this term in order to demonstrate that in similar cases the polyneuritis and the psychosis are independent of each other.

In the same year, Ballet and Faure published a contribution to the study of the "pathological anatomy of polyneuritic psychosis and of some primary psychic confusion." They supposed that the syndrome described by Korsakoff under the heading of polyneuritic psychosis was a variety of the psychic confusions and was accompanied by a toxic polyneuritis and that the cause of both elements of the disease was the same.

In 1899, Ballet was the reporter at the congress of French neurologists and psychiatrists on the question of what constituted "polyneuritic psychosis." He said that under this term one was to understand a combination of psychic syndromes with polyneuritis of a toxi-infectious nature. He said that there were three varieties of the psychic syndromes in connection with polyneuritis: 1, a delirious form, like the oniric delirium of Régis; 2, confusional, that is often of long duration and ends in mental enfeeblement, and 3, the amnesia form, that may often disappear, but that generally remained incurable. He considered that the infectious matter acted on the cells and worked marked changes in them; the corresponding manifestation of these changes could often be delayed a long time. He did not consider the term polyneuritic psychosis a happy one and added that Korsakoff himself preferred the substitute "cerebropathia psychica toxæmica."

In 1901, Maurice Perrin wrote a monograph entitled "Des poly-névrites." He said that Charcot was the first to notice the accompaniment of amnesia in alcoholic polyneuritis, but that Charcot also stated that Korsakoff had the honor of having been the first psychiatrist to have pointed out the disease characterized by amnesia in conjunction with multiple neuritis. Perrin thought that the psychosis in question could exist without the presence of a polyneuritis or could precede the psychosis. In proof of this the author states a case of this nature. He also considered that the term cerebropathia psychica toxæmica was a more acceptable one than was that of polyneuritic psychosis. He also preferred the term neurocerebrite toxique (Pierret). He differentiated, however, between the psychic confusion found in conjunction with the amnesia of Korsakoff's disease from that found in primary mental confusion. Thus, in some respects, he did not divide the opinions of his compatriots, Séglas, Vallet, Régis and others.

In 1901, Leon Chancellay wrote a monograph on polyneuritic psychosis and expressed his agreement with Korsakoff's ideas on

the subject, in so far that he admitted the individuality of this disease. He pointed out the fact that alcoholism was at the root of the disease in a large majority of cases, and that the onset of the disease could be either slow or rapid. He admitted that the amnesia observed in this disease was characteristic of itself and was not found in any other disease; this amnesia applied to recently acquired memories; the speech of the patient was peculiar and characteristic. Memories of old events could be intact, but at times the patient could not recall at what period of his life these events had taken place. When the examiner aided the patients on occasions of impaired memory, the latter accepted the suggestions without any criticism or opposition. These patients were also given to the construction of imaginary events and to a feeling of self-satisfaction. The prognosis in these cases was unfavorable; this, the authors explained, depended a great deal on the grave nature of the cases that generally found their way into the psychiatric wards. The author further remarked that "Korsakoff's syndrome" was often found as an accompaniment of cerebral edema and that the neuritis in such cases was of doubtful nature. Although he agreed that the term "polyneuritic psychosis" was, for the present, at least, the proper one, he was not quite certain regarding the individuality of the disease thus termed. He questioned whether it was not rather a simple variety of psychic confusion.

In 1902, Crocq, of Brussels, published a case of Korsakoff's psychosis in a senile subject. This publication was posterior to Soukhanoff's publications on the subject. Crocq said that this disease, as he had observed it, could be confounded with senile dementia, but that he could differentiate it from the latter in his own case.

In the same year two new monographs treating of this disease appeared in France. Potel and M-lle Libermann were the authors. Potel's conclusions were to the effect that in Korsakoff's disease the psychic disturbance preceded the polyneuritis and the latter persisted after the disappearance of the psychic trouble. The characteristic psychic disturbances were amnesia and mental confusion, and they could exist without the accompaniment of polyneuritis. M-lle Libermann, who wrote her thesis under the direction of Rossolimo, divided the opinions of Korsakoff regarding this disease.

Finally, this disease is described in a recent textbook on psychiatry, by Rogues and Fursac, in which it is considered as an individual polyneuritic psychosis. The classification given by these authors contains the statement that psychoses caused by auto-

intoxications are divided into three varieties: acute (uremia), sub-acute (polyneuritic psychosis) and chronic (myxedema, dementia præcox, chronic delusional insanity and progressive paralysis). The opinion of the authors is that polyneuritic psychosis, or Korsakoff's disease, consists of polyneuritic disturbances with psychiatric accompaniments, and that amnesia in various forms is the characteristic feature. This psychosis develops by reason of infection, intoxication and exhaustion. It is possible that all these causes work on the basis of the same principle,—the bringing about of disturbed nutrition and consequent auto-intoxication. At times the signs of polyneuritic psychosis set in insidiously, but an acute onset is more frequent. The onset may also simulate that of delirium tremens. The pseudo-reminiscences are generally mobile and the patient's attitude is that of indifference or of self-satisfaction. At times, when the psychic disturbance is marked, the neuritic trouble is hardly perceptible or absent altogether. The duration of the disease is long, according to these authors, ranging between several months and one year, ending often in recovery; death may supervene in some cases and others may end in chronicity.

From what precedes it is evident that the French authors were at first skeptical regarding the individuality of Korsakoff's disease. Sollier was among the first to accept fully Korsakoff's exposition of the clinical facts. It is only lately that Korsakoff's disease has been accepted as a clinical unit in the sense described by its author.

The consideration of this disease in the German literature began in 1890. In this year Korsakoff published his first two German articles on the disease. Tiling then published a paper, opposing Korsakoff's views. He agreed with Korsakoff regarding the amnesia in connection with polyneuritic disturbances. He stated, however, that in many cases of polyneuritis not of alcoholic nature he could not find any psychic trouble. He then insisted that most cases reported by Korsakoff that were not of alcoholic nature did not correspond to the description of the disease as a type. He cited seven cases of the disease and in only one could the action of alcoholism be excluded. He said that in this case the psychic disturbance was quite different from that found in the other cases: the degree of amnesia was less marked here than it was in the other cases and disappeared more readily than it did in the alcoholic cases. On the whole, this patient presented a less confused psychic condition than did the other patients. Nevertheless, the author admits that in other cases of non-alcoholic origin the psychic trouble may be more marked than it was in this particular case. He concludes by saying that alcoholic multiple neuritis belongs to

a special group of its own; that it cannot be considered as a peripheral disease only; that it should be looked on as a general affection of the peripheral nerves and of the brain. He further states that traumatic neurosis and senile dementia are quite allied to slight cases of alcoholic neuritis; that the prognosis of the motor and sensory disturbances in alcoholic polyneuritis is not always bad, but that the psychic trouble generally leaves after it some defect of memory. He explains the pseudo-reminiscences differently from Korsakoff. Tiling says that they are due to an incorrect association of events with the time of their occurrence. Korsakoff, as is known, explained the disturbance on the ground of disturbed association of ideas. Tiling thinks, on the contrary, that these patients associate ideas too readily and while making their associations hastily, they are exposed to making wrong associations. When the degree of this amnesia is marked it may bring about aphasia and agraphia.

In 1890, Kahler described a case of multiple neuritis with psychic disturbances. He considered this clinical manifestation as a most usual fact. He stated that psychic disturbances of various degrees and kinds were apt to accompany the nervous trouble and that intoxications of various kinds were at the root of the disease.

Frank wrote his thesis on polyneuritic psychosis in the same year. The case he described was not of alcoholic nature, the patient having lived in unhygienic conditons; he also suffered from a chronic affection of the gastro-intestinal canal. He considers that the poor nourishment of the patient was the cause of the disease, but he does not take into consideration the chronic affection of the gastro-intestinal tract. He concludes that the disease can be caused by other agents than infection and auto-infection, which Korsakoff lays so much stress on as causative agents. Frank finally says that the psychic trouble in this disease is of purely functional nature.

A few months after Frank's report, the same patient was presented by Brie, at the Bonne medical convention. Brie laid particular stress on the gastro-intestinal trouble that preceded the onset of the disease and said that he believed, with Korsakoff, that the polyneuritic psychosis in this case was due to auto-infection. He also said that the disturbances of memory in connection with alcoholic neuritis were commonly known in clinical work; that the merit of Korsakoff's observation of the amnesia in question consisted in his having pointed out the peculiarity of this amnesia, and in the fact that it could be met with in other than alcoholic

polyneuritis. He also said that some of Korsakoff's cases were not convincing, because the polyneuritis was not sufficiently marked and the psychic disturbance insignificant.

In 1890, Oppenheim published a book entitled "The pathology of multiple neuritis," and said that he could not find any cases with the characteristic psychic disturbance in patients with non-alcoholic neuritis.

In 1891, Brasch published a paper on multiple neuritis and agreed entirely with Korsakoff's views on the subject. Pal followed with a monograph, describing some cases of polyneuritis. He said that he fully agreed with Korsakoff's views regarding the individuality of this affection when it is accompanied by the psychic disturbances. His 3d and 4th cases were typical representations of Korsakoff's disease. One of these cases of polyneuritis developed after lead poisoning. The patient presented mental confusion, delusions and hallucinations. It must be remarked that such a case cannot be recognized by us as one of Korsakoff's disease.

In 1892, Hovel described a case of post-typhoid acute dementia associated with polyneuritis. His case fully corresponds to Korsakoff's disease.

Tiling again published a paper on the question in the same year and said that he had never affirmed that the psychic disturbance described by Korsakoff was an accompaniment of alcoholic polyneuritis exclusively that his statements had been misinterpreted; that he had only drawn the attention to the frequency of this particular combination of manifestations. He further said that, auto-intoxication was not a necessary cause of this disease; that the characteristic psychic trouble could take place without an accompanying neuritis; he pointed towards the phenomena observed in traumatic and senile psychoses and said that these psychic troubles were similar to those here considered, although they were not accompanied by multiple neuritis. He, therefore, considered the term "polyneuritic psychosis" inadequate. He says that there is nothing characteristic of cases presenting troubled memory jointly with mental confusion, fears, fretting, illusions and hallucinations. The only characteristic trait is the impaired memory after the clearing of the mental state. The psychic disturbance described by Korsakoff he does not consider as being anything new. In proof of his statements, Tiling cites his cases. One is that of post-typhoid polyneuritic psychosis, the second is one of senile mental enfeeblement, and two cases are those of traumatic psychoses.

In 1892, Wagner published his observations and said that he agreed with Korsakoff's views on the subject. He further remarked that after Korsakoff's publication treating of the disease, he observed the frequency of occurrence of post-febrile psychoses in conjunction with polyneuritis.

In 1892, a paper was published by Boedecker, in the *Charite-Annalen*, entitled "Alcoholic Paralysis of the Ocular Muscles." One of the cases presented a singular psychic disturbance, which developed after the patient showed some grave symptoms of delirium tremens. The author thinks that the case was one of Korsakoff's disease.

In 1893, Fuchs published a case of polyneuritis of alcoholic nature, with an impairment of the optic nerve and psychic changes. He gave a detailed clinical and anatomical description of the case and concluded that it corresponded to Korsakoff's disease. The patient suffered from pulmonary tuberculosis.

In the same year, Giese and Pagenstecher, described a case of polyneuritic psychosis with an autopsy. The authors said that the muscular degenerative changes were primary and were due to the same cause as was the nervous degeneration; that toxin infection was responsible for both manifestations and that the infection was due to tuberculosis.

In 1894, Moeli published a paper on "Psychic Enfeeblement in its Various Forms," and said that the psychic troubles described in his 3d (*) case resembled those found in Korsakoff's disease. He drew attention to the fact that in his case there were no polyneuritic symptoms; these were also absent in his other cases.

In 1894, Binswanger pointed out Korsakoff's disease as one to be differentiated from general paralysis. He said that if the polyneuritis is overlooked, the disease could be confounded with general paralysis.

In 1896, Redlich described three typical cases of Korsakoff's disease. He said that the toxemic changes could be ascribed to auto-infection through the gastric tract. He further pointed out the possibility of a transition from polyneuritic psychosis into amentia. This conclusion is made on the ground of Wagner's publication, which shows that the nerve trunks were involved in many cases of amentia, and that after an improvement in the condition of amentia one often finds an impaired memory. The author says that the prognosis of polyneuritic psychosis is generally favorable, although in grave cases some defects may be left.

*Monkemoller uses the same case in his statistical work.

In 1896, Gudden agreed with Tiling that polyneuritic psychosis, so-called, could exist without any polyneuritis. Gudden said that encephalitic processes, especially near the third ventricle, were often found in cases of alcoholic polyneuritis associated with psychic disturbances. That the centres of the ocular muscles were apt to be affected; that in some cases he found a considerable decrease of association fibres; this was the case when there were signs of atrophy of the cerebral substance.

In 1897, Jolly published in the "*Charite-Annalen*" his report read at the Moscow Congress of Medicine, in which he considered the question of Korsakoff's disease. He agreed with Korsakoff, regarding the the toxic origin of the disease. He made this admission on general principles only, because this cause, he said, could bring about various forms of disturbance, and it was not right to consider this disease in a group by itself. He argued that the symptom-complex that characterized polyneuritic psychosis, could manifest itself without any neuritic symptoms, as is seen in cerebral syphilis, or in senile dementia. He objected, therefore, to the terms proposed by Korsakoff.—"psychosis polyneuritica" and "cerebropathia psychica toxæmica." Jolly proposed to call the symptom-complex described by Korsakoff, "Korsakoff's Syndrome." Jolly said that the cardinal traits of this syndrome were: 1, disturbance of memory (forgetfulness and retrograde amnesia) and 2, pseudo-reminiscences. He said that there were many transition stages between delirium tremens and Korsakoff's syndrome. He cited sixty cases of multiple neuritis, and said that at least one-third of these did not present any psychic disturbances, and that Korsakoff's syndrome was to be found in the grave forms of polyneuritis. He remarked that women were less resistant to the toxins that cause the form of polyneuritis with psychic complications. He concludes by saying that there is a certain constancy about the cerebral changes in those cases, which end in recovery with defects. In this reference he also cites Gudden's results.

In 1897, Tiling again published a contribution, entitled "Alcoholic paralysis and infectious multiple neuritis." Ransohoff published a paper entitled "Erroneous memory in alcoholic paralysis." Strumpel also publishes a paper on the peculiar disturbance of memory met with in polyneuritis, especially of alcoholic nature. He said that the loss of memory applied not only to old, but also to new events.

In the same year, Mouravieff published in the "*Neurol. Centralb.*" two cases of polioencephalitis hæmorrhagica superior acuta, one of which presented a combination of polyneuritic psychosis

with Wernick's form. The author remarks that in this case one cause was responsible for the impairment of the central as well as of the peripheral nervous system, and that it also caused the degenerative and inflammatory processes.

In 1897, Tiling also remarked in one of his articles here cited, that he agreed with Korsakoff on the question of the characteristic psychic condition in connection with polyneuritis, even when this is of non-alcoholic origin; but the mutual relation between alcoholic and non-alcoholic neuritis he considered an open question. In the case of non-alcoholic origin, the neuritis and psychic trouble are generally of acute onset, while in the case of alcoholic paralysis, the development is slow, the impairment of memory is gradual, the somatic disturbances are gradual, and the polyneuritic symptoms set in suddenly in addition to these troubles. According to Tiling, the psychic disturbances are the first to show themselves in alcoholic paralysis; and while this trouble in alcoholic paralysis always leaves some mental defect, complete recovery may often take place in the polyneuritic psychoses of non-alcoholic origin. The psychic form during the course of alcoholic paralysis, he says, is extremely simple and easily differentiated from other psychic forms similar to it. One might designate it as a condition of primary dementia. Memory is the faculty that is impaired most, and the other psychic faculties are secondarily involved. These patients are incapable of getting new impressions, but they perform cerebration with their old impressions as well as do healthy people. Speaking further of the differential diagnosis between this disease and progressive paralysis, Tiling says that in progressive paralysis, the cranial nerves are the first to be attacked, while in alcoholic paralysis the affection is ascending in nature. In alcoholic paralysis speech is well articulated and the pupils react well. As for the impairment of the psychic faculties, judgment is intact in alcoholic paralysis, while it is rapidly destroyed in progressive paralysis. He further says that delusions and hallucinations are not characteristic of polyneuritic psychosis.

Criticising the above cited article, Ransohoff expresses his agreement with Korsakoff's views, regarding the origin of the pseudo-reminiscences in alcoholic paralysis, and says that, these reminiscences may be the basis for the formation of delusional ideas.

In 1898, Mönkemöller studied a large number of hospital cases and expressed his endorsement of Korsakoff's views regarding the disease named after him. He remarked, however, that the term polyneuritic psychosis was not properly applied to the disease in question, because the neuritic element was not always an accompaniment of the psychosis. He said that he preferred to have the

affection called "Korsakoff's disease." He further points out the great difficulties encountered in differentiating this disease from others of similar form. Progressive paralysis and especially senile dementia, are difficult to differentiate from it under certain circumstances. The characteristic and differential trait of Korsakoff's disease is the intactness of the intellect and judgment on the one hand and the marked amnesia, on the other hand. Mönkemöller calls attention to the fact that patients subject to polyneuritic psychosis are remarkable for their happy dispositions, especially if the disease is of alcoholic origin. He remarks, however, that this disposition seems to be the rule in ancoholists in general. Mental depression is generally observed in polyneuritic psychosis if the disease is of slow development and is caused by marasmus. However, the disposition of these patients may be quite variable; at times it is paranoidal in form, as they are apt to manifest considerable distrust towards their surroundings. Mönkemöller further says that the prognosis of Korsakoff's disease is not favorable, as the general resisting power is generally wanting. Senility and grave general diseases make the prognosis worse. Speaking of the etiology of the disease, the author says that there is an impairment of the tissue metabolism similar to that observed in chronic diseases, such as alcoholism, nephritis, and other somatic affections. The exciting cause of this disease is generally of acute nature. This may be an infection, or a cerebral traumatism. Delirium tremens may also be considered as an exciting cause.

In 1898, E. Schulze also published a paper treating of Korsakoff's disease and said that it was an affection *sui generis*, and it could be considered as a disease caused by infection of the cerebrum; he also stated that clinical manifestations akin to those observed in this disease could be seen in senile dementia, in general paralysis and in cerebral traumatism, but that the form in these latter diseases was not of the pure variety, met with in Korsakoff's disease. He did not agree with Korsakoff regarding the constant accompaniment of the neuritis in this disease and preferred to call the disease by the name of its discoverer. Rohde published a case of this disease at the same period of time. He agreed that the disease was characteristic of itself and said that the psychic trouble was only part of the general morbid manifestations. He further said that polyneuritic psychosis of alcoholic origin should not be confounded with pseudo-paralysis of alcoholic nature. He considered that the prognosis of the disease was unfavorable.

In 1898, Lipmann published a case of polyneuritic psychosis. The prominent trait in this case was the following: the auditory memory was less affected than was the visual one. In Korsak-

koff's disease, the reverse is generally the case. In Lipmann's case the neuritic symptoms were absent.

In 1898, E. Meyer published a paper in which he treated of a case with numerous pseudo-reminiscences, but the patient, according to the description given, was undoubtedly a general paralytic.

In 1899, Kahlbaum published two cases of polyneuritic psychosis, the second of which justifies our supposition that it was one of progressive general paralysis. In the first case the autopsy showed a recent hemorrhage in the internal capsule and numerous focuses of softening.

In the same year, Mönkemöller and Kaplan described a case of myxosarcoma of the brain with Korsakoff's symptom-complex.

In 1900, Siefert reported a case of polyneuritic psychosis in an alcoholic subject, which ended fatally in the course of six days. Microscopically there were found recent degenerative changes in the nerves and muscles, especially in the ocular muscles. The most marked changes in the brain were located in the central convolutions. These changes were similar to those found by Gudden and Heilbronner. Siefert agreed with Korsakoff that polyneuritic psychosis was due to toxemic changes of the blood and explained the anatomical findings on this basis.

In 1900, M. Lueckerath reported a case of Korsakoff's psychosis and said that the limits of this disease should be narrowed, because it could exist without presenting any polyneuritic trouble. He drew attention to the fact that the visual memory was less impaired than that of the other sensory functions. He further said that the amnesia resembled that found in senility. He could not agree with Korsakoff's idea that delusional ideas could be based on the pseudo-reminiscences which are prominent in this disease and concluded by saying that the prognosis was favorable in non-alcoholic cases only.

In 1900, C. Heinrici published a paper on multiple neuritis, in which he cited two cases of alcoholic origin, accompanied by Korsakoff's psychosis. He agreed with Korsakoff's views on the subject of the nature of this disease.

In 1900, Raimann and Helzholz published their works on the relation between Korsakoff's disease and polioencephalitis acuta hæmorrhagica superior. The authors said that these diseases were only different forms of the same affection and that both were caused by a specific auto-infection, different from that which causes delirium tremens. Elzholz, therefore, considered that the term cerebropathia psychica toxæmica, suggested by Korsakoff, was a

good one. He also said that the auto-infection was of a specific nature because the ocular muscles were frequently affected in Korsakoff's psychosis, while in delirium tremens this was a rare occurrence.

In 1901, Raimann published another paper, entitled "A study of alcoholic paralysis of the ocular muscles," in which he said that the ocular muscles were often paralyzed in alcoholic cases characterized by Korsakoff's psychosis. Statistically he found that thirty per cent. of these cases presented ocular troubles,—inequality and impaired reaction of the pupils, etc. These changes have a practical importance, as they enable us to differentiate between the alcoholic forms of the psychosis and ordinary progressive paralysis of the insane.

In 1901, Zahn described a case of Korsakoff's psychosis in which it was impossible to point out the usual etiological factors.

In 1901, Bonhoeffer published a monograph entitled, "Acute Psychic Diseases of Habitual Drunkards," in which considerable space was given to the consideration of Korsakoff's psychosis. He said that this disease should be grouped with the alcoholic psychoses because there was a similarity between it and delirium tremens and other troubles of alcoholic nature. While he considered that the characteristic amnesia could show itself under other influences than chronic alcoholism, the course of Korsakoff's disease was characteristic of itself. Senile dementia or presbyophrenia, appeared to be similar to this disease only from a superficial standpoint. Korsakoff's disease generally appeared, he said, in chronic alcoholists at about forty-five years of age. He also said that Korsakoff's psychosis could appear without polyneuritic symptoms. Bonhoeffer insists, however, on the diagnostic importance of the presence of the neuritic symptoms, that are seldom absent. The latter author says that there exists an intimate relationship between Korsakoff's psychosis and Wernicke's polioencephalitis.

In 1902, some more works appeared that treated of Korsakoff's psychosis. Westphal describes a case that presented peculiar tendon reflexes. Mannes described a case of post-typhoid origin. Raimann described a case of gastro-intestinal origin. Chotzen published cases caused by chronic alcoholism. He said that it was difficult to differentiate between this disease and progressive paralysis, because paralysis of the cerebral nerves was often found in chronic alcoholism. Thick speech and clipping of words is characteristic of progressive paralysis and excludes polyneuritic psychosis. Chotzen remarks, with Jolly and others, that women are more susceptible to Korsakoff's disease than are men, but

that the gravity of the disease is the same in both sexes. He found only one recovery among thirty-eight cases. He ascribes the troubled orientation and the amnesia to an impairment in the process of perception.

Finally, Horstmann published two cases of Korsakoff's psychosis in the "Nordost-deutscher psychiatrischer Verein."

In his text-book on psychiatry, Krafft-Ebing makes some mention of Korsakoff's psychosis, in the chapter treating of the etiology of psychic diseases. Kirchoff does not even mention this disease. In his work of 1899, Kraepelin devotes a few lines to the consideration of this disease, and classes it with the infectious psychoses and with conditions of psychic enfeeblement. In a preceding edition of his book, Kraepelin made a mistake when he said that a special form of insanity in connection with polyneuritis was described by Tiling and Korsakoff. As has been stated above, Tiling played an entirely different role in the teaching of the existence of this disease. Kraepelin says that he has never seen a case that answers Korsakoff's description. In 1901, Kraepelin published in his "Introduction to Psychiatry," a personal observation of a case of Korsakoff's disease. According to him, polyneuritic psychosis is the result of pure infection (alcohol, morphine) and recognizes the disease as an individual psychic variety.

In 1900, Wernicke considered polyneuritic psychosis in his "Grundriss der Psychiatrie" and said that the disease presented four cardinal symptoms: 1, disturbed orientation, 2, impaired memory, 3, retroactive amnesia and 4, tendency to confabulation. He said that similar symptoms could characterise traumatic psychoses and that a similar psychic condition was observed in presbyopherenia. He added that although some cases could make a gradual recovery, the prognosis was generally grave. During the course of 1899-1900, he presented four cases of polyneuritic psychosis.

In their new text-books, Mendel and Ziehen make some cursory remarks about polyneuritic psychosis.

In his "Atlas und Grundriss der Psychiatrie," Weygandt speaks of polyneuritic psychosis as belonging to the group of psychoses accompanied by nervous trouble and he accepts Jolly's views on this subject.

Thus, the history of the development of the teaching of Korsakoff's psychosis in Germany comprises various phases. Tiling's ideas were unconditionally accepted by those who followed him (Brasch, Brie, Hoevel, Redlich and others). The criticisms of Gudden and Jolly present another phase of the history. Jolly looked on Korsakoff's psychosis as on a syndrome that could ac-

company various diseases. With Tiling and Gudden, he did not believe that there existed an inseparable tie between the characteristic psychic symptom-complex and the polyneuritis which together constituted one individual disease. He also said that there was an intimate relationship between Korsakoff's syndrome and delirium tremens. In 1898, Mönkemöller and Schultze endorsed the individuality of Korsakoff's psychosis, but agreed with the preceding authors regarding the accompanying polyneuritis: he did not think that the latter was an invariable element of the disease. Other authors agreed with Jolly or Mönkemöller and Schultze. Lately, Korsakoff's psychosis received closer and more detailed analysis and active attempts were made to establish a close relationship between this disease and polioencephalitis acuta haemorrhagica superior Wernicke. On the other hand, some authors claim that Korsakoff's psychosis should unconditionally be grouped with alcoholic psychoses.

The description of Korsakoff's disease as given by its author is accepted, although within narrow limits, by almost all the German authors. The characteristic psychic change is accepted by all as being an impaired memory. The toxaemic theory as given by Korsakoff has been accepted almost unanimously. The only exception to the list of endorsers was Frank, who claimed that polyneuritic psychosis could set in and develop without there being any toxaemic changes of the blood.

The Italian literature regarding Korsakoff's psychosis is comparatively scant. It appears that the few publications that were known in Germany and in France were quite unknown in Italy. Thus, in 1894, Sciamanna published a typical description of the characteristic amnesia of post typhoid origin, in a man forty-three years of age, but he did not mention any of the published papers treating of the disease in question. Collela, familiar with the clinical work of Charcot and Hitzig and with the question of polyneuritic psychosis, published, in 1904, a substantial monograph treating of this disease. He speaks of eight cases of this disease that came under his care, one of which ended by softening of both cerebral hemispheres. He is a close follower of Korsakoff's ideas regarding polyneuritic psychosis. He says that psychic disturbance is apt to take place during the course of certain intoxications, especially during the course of chronic alcoholism or during convalescence from infectious diseases; that this psychic trouble may be combined with multiple neuritis; that both the psychic and neuritic troubles are probably caused by the same infection; that certain infectious agents, that act simultaneously on the blood and the nervous system, affect the nervous and muscular systems at

the same time in various degrees, so that either the psychic or the peripheral symptoms are most marked. That heredity plays an important part in the development of this disease. The psychic symptom-complex is peculiar to this disease, and amnesia is the predominating trait; disturbed consciousness, co-ordination of ideas, excitation and delusions may accompany the cardinal traits of the disease. Collela further says that the amnesia sets in suddenly in some cases, while in others the amnesia is accompanied by incoherence and troubled consciousness, and in others still a marked excitability is the predominating feature. He supposes that the psychic symptom depends on a functional impairment of the association fibres. Cerebral symptoms appear synchronously with those of polyneuritis. In some cases both symptoms are equally marked, while in others they differ in degree of development. He says that the onset, course, development and termination of polyneuritic psychosis vary according to the cases. The prognosis is fatal in cases that develop suddenly and with intensity, when the cause cannot be removed and when the patient is in a condition of exhaustion. The diagnosis is favorable even in chronic cases, when the cause can be removed and when the patient's condition is satisfactory. Recovery may take place after a period of some months and even after the course of some years.

In 1895, Ferarri published a critical note in which he said that polyneuritic psychosis did not appear to him as an individual and characteristic disease. He did not support his views by personal observations.

In 1898, Buccelli published a case of polyneuritic neurosis that, according to him, was due to tobacco poisoning; the patient was sixty-four years of age.

Finally, in 1902, Esposito published a paper on "So-called polyneuritic psychosis." He speaks of two cases, one of which may be considered as an example of Korsakoff's psychosis. As in one of his cases amnesia existed without polyneuritis, Esposito concludes that Korsakoff's disease may exist without there being any polyneuritic trouble and that the latter alone may also constitute the entire disease. He says, finally, that there seems to be no necessity for grouping the disease by itself, as even the amnesia is not present in all cases of polyneuritic psychosis.

The English literature is not prominent in contributions to the study of polyneuritic psychosis. The works on this subject seem to be exhausted in the contributions of Atwood, Ross, Fisher, Oswald, Smith and Cole. These authors remark that multiple neuritis is often accompanied by psychic disturbances, of which amnesia is a prominent feature. Fisher remarks that his attention

was drawn to this point after he had become familiar with Korsakoff's works. Fisher cites six personal observations (one man and five women) of polyneuritic psychosis of alcoholic origin. He says that the cerebral symptoms consist mostly of impaired memory regarding time and space; to this may be added disturbed co-ordination of ideas and, at times, hallucinations and illusions. The course of the disease, according to him, may be acute or chronic and complete or partial recovery may take place even in chronic cases.

Reynolds, who is familiar with the epidemic of arsenical paralysis, states that some of these patients presented psychic disturbances in the form of mental confusion and amnesia in reference to time and space; this kind of amnesia is characteristic of alcoholic paralysis.

In 1900, an extensive work on polyneuritic psychosis was published in the Tchech language. This work seems to have remained unknown to those authors who were interested in the question of polyneuritic psychosis. This work was published by Dr. Soreys. The title of the work is "Multiple neuritis, Korsakoff's disease, psychosis polyneuritica cerebropathia psychica toxæmica" and "polioencephalitis acuta hæmorrhagica superior (Wernicke)." The author described two cases from Professor Maixner's wards. The cases are as follows:

Case I.—A woman, 39 years of age, entered the clinic January 9, 1900. Her father was an alcoholic and had suffered from alcoholic psychosis. Her mother was subject to biliary calculi; one sister was tubercular and one brother was neurotic. During her childhood the patient was subject to some convulsive attacks. When quite young, she commenced to indulge in alcoholic drink. In 1893, she had an attack of some cerebral disease with psychic symptoms: she had terrifying hallucinations. She also had diplopia and weakness of the extremities. After recovery from this disease, the patient resumed the indulgence in alcoholic drinks. She soon had gastric trouble,—diarrhea, vomiting and hæmorrhagic expectoration. November, 1899, she suffered from pains and weakness in the extremities; then followed symptoms of syphilis, against which mercurial treatment was given her. On admission to the clinic she presented paralysis of the lower extremities, absence of knee reflexes, pains in the feet, muscular atrophy and wasting of the upper extremities. The patient was restless and talked to herself; she did not know that she was in the hospital or how long she had been there. After the restlessness had subsided she suffered from marked amnesia and pseudo-

reminiscences. In 1900, she still remained in an apathetic mood and had an impaired memory, especially relating to time.

Case II.—A man, 54 years of age, married, coachman, was admitted to the clinic April 21, 1900. His father died of an accident, a brother suffers from psychic impairment and the whole family has a tubercular taint. The patient uses alcoholic drinks to excess. He says that his sight began to fail him in April, 1900. This was followed by pains and weakness in the legs, slight incoherence and amnesia. When admitted to the hospital the patient was so weak that he could not stand or sit up; the knee reflexes were abolished and the patient often told stories that had never happened. He died seventeen days after admission to the hospital. An examination of the tissues showed that the peripheral nerves were degenerated, the gray matter of the brain was also affected in a manner similar to that seen in Wernicke's polioencephalitis. Nissl's method was used and it was found that the cerebral cells were markedly impaired.

The author concludes, from the study of his own two cases and from that of the 156 cases reported in literature, that Korsakoff's psychosis is caused by chronic alcoholism in the majority of cases and that it may also be caused by other intoxications or infectious diseases. Soreys is inclined to think that Korsakoff's psychosis and Wernicke's polioencephalitis are different forms of one and the same disease, caused by toxins that act on the brain substance. In Korsakoff's psychosis, he says, the cerebral gray matter is affected first, while in Wernicke's form the striking trait is the affection of the cranial nerves. He adds that delirium tremens is only a slight form of the same intoxication, affecting the cortex only and that may disappear without leaving any morbid traces. There are numerous intermediary forms of the same affection, he adds. He says that he found 70 per cent of Korsakoff's psychosis with marked polyneuritis, 15 per cent. with slight polyneuritic trouble and the rest without any polyneuritic trouble.

In the above cited bibliography were cited those cases of psychoses with polyneuritis which were published after the publication of Korsakoff's works that treated of this subject. We shall now cite our new observations on Korsakoff's psychosis.

A man, A. S. K., forty-three years of age, married, wigmaker, entered the Moscow Psychiatric Clinic November 16, 1902. His father was healthy and indulged moderately in alcoholic drinks. The patient's mother indulged daily in from two to three glassfuls of *vodka* and at times she drank until she became drunk. This habit she acquired when 35 years old and kept it up until she was 65 years old. She always had pains and weakness in one leg.

Her mother was also a drunkard. The patient's mother had had nine pregnancies, the first and the last three of which ended in premature births. The patient's daughter died of some cerebral disease. The patient has a boy 16 years of age and a girl 12 years of age; both children are neuritic and irritable.

During his own childhood, the patient was often made drunk with *vodka* by his grandmother. This abuse she practiced on him particularly between his ages of 8-10 years. At this age he was brought to Moscow to become an apprentice to a French wig-maker. The latter often beat this new apprentice. Three years later our patient went to work with a new employer; he then made several more changes of places and finally became associated with a wigmaker with whom he remained for fifteen years. He had only one disagreement with his last employer, left him, went to work for one year in another establishment and finally returned to this employer. At first the patient performed his work without feeling any ill effects from it, but during the last three years he felt considerably fatigued after his day's work. He was known among his associates as a modest and good-natured man of an even disposition. He began to indulge in the use of wine when 16 years old. At first he drank moderately, but later on he drank more frequently, taking, in addition, from four to five glassfuls of *vodka* daily. During the last eight years he indulged daily in from one-half to a bottleful of *vodka*, but was seldom seen to be drunk. He appeared depressed on days when he did not drink *vodka* and seemed to look brighter when taking some wine on such occasions. He smoked some thirty cigarettes daily. He denies having had any syphilitic infection. His wife says that during the last nineteen years he has been suffering from constipation. Eleven years ago he suffered from marked pains in the feet and he was relieved by using salicylate of potash during a period of two weeks. Five years ago he had an attack of nosebleed. At about the same time he began to suffer from eczema of the right hand, which lasted about eighteen months. During the last five years he has been suffering from dyspnea, heartbeat and faintness about the heart. He has also been subject to morning-vomiting. In February, 1902, he fell ill with some acute infection and his temperature was 40 degrees C. He had a cough, sneezing and pains in all parts of the body. The temperature fell somewhat lower in a few days, but remained quite high during a fortnight. During the first three days of his illness he spent three restless and sleepless nights and had hallucinations of alcoholic coloring.

Septemper 6, 1902, the patient stopped drinking *vodka*. He says that this was followed by a sudden attack of severe vertigo.

September 12 or 13, he was grieved over the fact that he did not succeed in opening his own manufactory of wigs, as he had hoped he would do. He was depressed and took little interest in his surroundings, although he was induced, September 27, to go to some private house to dress the hair of a lady. He went there without taking along the necessary appliances, and the lady was very angry about this. This had a marked effect on the patient. He had a sudden attack of vertigo and vomiting and fell to the ground, remaining unconscious for three hours. He also urinated under himself. He was placed in a hospital and ice was applied to his head. On awakening, he complained of marked pain in the temples. He was taken home on the following day; he was weak and could not walk without being supported. The pain in the temples lasted for some two weeks. His temperature was 38 degrees C. during the two days following the attack. There were no particular psychic symptoms and the patient progressively improved. October 11, he felt much improved and was preparing to resume his work. The evening of that day, he suddenly had a second attack of unconsciousness and foaming at the mouth. He regained consciousness some minutes later, but the attack was repeated twenty minutes later. After this attack, he remained immovable for three hours, breathing superficially. He began to move after this, but did not answer questions addressed to him. During the attack he bit his tongue and had a bowel movement in his clothes. He regained consciousness towards the following morning. He asked for some water and his voice was hoarse. October 12, he was placed in a private hospital, where he remained until November 2. On admission it was noticed that his consciousness was stunted, he was drowsy, although he answered questions addressed to him. He did not realize that he was in a hospital and was delirious to a certain degree. At times he recognized the physicians, but at others he took them to be his chums. He recognized his near relations. The cranial nerves were in good condition and the reflexes were impaired. His temperature went up to 37.4 and 38.2 degrees C. The pulse beat 130 per minute. October 25, the temperature became normal, the pulse approached nearer the normal and the patient became less depressed. He complained of pains and of a feeling of fatigue in his body and head. He was quite weak. His memory was poor. He could not remember what had been said to him a few minutes ago. When he became brighter, the impaired memory was more marked and he began telling stories about where he had been and especially about his drinking feats in company with his chums. These stories did not correspond to his real condition and doings.

At times he was not quite certain whether he was staying at home or not. The most marked feature was his amnesia. He was now of an even disposition, good-natured and even jolly.

The last examination was thus characterized: He is of medium size, well built and nourished. His abdomen is somewhat bulky. The right pupil is somewhat larger than the left. The right soft palate is lower than the left. His physical strength is below the normal. The tendon reflexes are absent in the bicipitis. There is tremor of the fingers when extended. The lower extremities are markedly wasted, especially in the calf of the legs. There is pain on pressure of the right crural and ischial nerves. On the left side the corresponding nerves are less sensitive. There is sensitiveness on pressure of the muscles of the calf of the legs. The knee reflexes are absent. The gait is uncertain. Romberg's symptom is present. The patient complains of marked pains in the feet.

PSYCHIC CONDITION.—The most marked trait is the impairment of memory. He cannot remember what he had just told, where he has come from. Says that he has been in the clinic three days, although this does not correspond to the truth. He knows that he is in a clinic, but cannot tell in what part of the city. He cannot tell the name of the day, the date of the month or his own height. He cannot remember having been in an infirmary lately, but he can remember more remote happenings. He can tell approximately when he was born and name the department and town where he was born. He makes some mistakes regarding the time of certain happenings. When giving the ages of his children he generally gives a figure that is from 2 to 8 years below their real ages. He mistakes those about him for old friends. He thinks that his memory is good. When he realizes that he cannot give a correct answer, he tries to evade the question. Besides, he tells with an air of perfect reality, imaginary stories about his doings of the precedings day. Thus, he tells of a hunting trip, of having shot some rabbits, etc. His disposition is good. He has great difficulty in making the simplest addition of figures.

THE COURSE OF THE DISEASE.—The impaired memory remained unchanged. He continued telling imaginary stories of most phantastic nature. Thus, he told a story of having gone fishing and that an immense fish sprang at his friend and began to beat him and finally tore his wedding ring off his finger, etc. At first, it was impossible for the patient to remember the name of his physician. Later on he tried to learn the names of some of those

who came in contact with him. He did this with much difficulty and applied the names to the wrong persons. Finally, he retained only two names. He gradually learned to remember the name of the day, the date of the month and the year. He had great difficulty in remembering the year. He stopped telling imaginary stories as he did in the beginning, although he did tell a phantastic tale now and then. Lately, his amnesia applies especially to events of his own life, beginning with his first attack. He is improving in nutrition and in strength, the knee reflexes reappeared and an electric examination showed that there was no reaction of degeneration in the muscles.

The above cited case is a typical example of Korsakoff's psychosis, so far as we are familiar with its aspect. The cerebral symptoms were more marked than were the nervous troubles, although the latter were quite in evidence, particularly in the beginning of the disease. The nervous troubles rapidly disappeared with the improvement of the patient's general condition, while the psychic troubles, after some slight improvement, persisted, particularly in the form of disturbed memory. The etiological factor in this case was chronic alcoholism, as it is in the majority of cases. The disease was of slow growth, but did not show itself prominently until the appearance of the attacks.

There are altogether one hundred and ninety-two cases on record, which we cited in the bibliographical sketch above. Of these cases 66 were published in Russian, 94 in German, 13 in French, 11 in Italian and two in the Tchech language. Korsakoff alone published 38 of this total number of cases. Of the 192 cases there were 112 men and 80 women. In other words, the disease is $1\frac{1}{2}$ times more frequent in men than it is in women. We tried to define the etiology of this disease. In some cases there was more than a single cause. We then tried to define which among many causes was the most responsible morbid element. In the cases of some authors this was not difficult to define while in others the task was not quite simple. In general, we came to the conclusion that the causes of Korsakoff's psychosis, as described by various authors, were as follows:

In 37 cases polyneuritic psychosis was due to alcoholism; 17 cases were of post-typhoid nature; 9 cases were of septi-pyemic origin; 6 cases developed after jaundice; in 2 cases (in men) the disease set in after malignant swelling of the lymphatic glands; in 2 cases there is a history of some indefinite febrile condition; one case is described in connection with gastro-intestinal catarrh, one in connection with some vascular trouble, one in connection with uterine fibroma, one in connection with dysentery, one in

connection with some abdominal swelling, one in connection with tobacco poisoning and one in connection with diabetes. In six cases it was impossible to point out any cause. We concede that the stated causes have only a relative meaning; nevertheless, the fact appears that the predominating cause of Korsakoff's psychosis is chronic alcoholism. This is the cause in almost three-fourths of all the cases collected. If the men and women patients are considered separately, we find that chronic alcoholism was the major cause of the disease in 90 cases of men; 8 of this number had histories of typhoid fever, 2 had histories of pyemia, 2 cases had histories of malignant swelling of the lymphatic glands, 2 cases had histories of jaundice, 1 case had a history of gastro-intestinal catarrh, 1 case had a history of an ill defined fever, one had a history of some vascular trouble, one had a history of diabetes and one had a history of excessive smoking of tobacco. It may be said that in these cases chronic alcoholism is the cause of polyneuritic psychosis $4\frac{1}{2}$ more than are all the other causes. Typhoid fever is the next frequent cause of this disease. In 69 cases of women with polyneuritic psychosis, where a definite history could be obtained, we found that chronic alcoholism was the cause in 47 instances. Typhoid fever was the cause in 9 cases of the total number; pyemia was the cause in 7 cases; jaundice was the cause in 4 cases and the following were the causes in single cases: influenza, undefined febrile condition, uterine fibroma, undefined abdominal swelling and, finally, dysentery.

From the above statements it is evident that chronic alcoholism is a far more frequent cause of Korsakoff's psychosis in women than it is in men. Indeed, in women more than half of the cases of polyneuritic psychosis are due to chronic alcoholism. Typhoid fever is the next frequent cause; then follows pyemia and jaundice. We wish to remark that when speaking of septi-pyemia as a cause in these cases we included under this heading not only general septi-pyemia, but also cases with local focuses, as in parametritis with accompanying high fever. In women septi-pyemia is far more frequent as a cause than it is in men. The following table shows the relative frequency of the disease in men and in women at stated ages:

Age.	Men.	Women.
Up to 20 years.....	..	4
21—25 "	2	5
26—30 "	5	9
31—35 "	13	10
36—40 "	19	14

Age.	Men.	Women.
41—45 years.....	20	9
46—50 "	23	11
51—55 "	13	2
56—60 "	8	3
Above 60 "	4	8

From the above cited table it is evident that the largest number of Korsakoff's psychosis in men takes place between the ages of 41—45 and 46—50, while in women the most favorable age for the development of this disease is between 36—40.

It is of interest to note that the cases marked as having developed before the age of 20 related to women, who supply the largest number of cases at an earlier age than do men. As some authors declared that Korsakoff's psychosis could exist without being accompanied by multiple neuritis, we eliminated all cases that did not present any multiple neuritis. While doing this we found that all the cases of Korsakoff's psychosis in women presented multiple neuritis to a marked degree. There were 76 cases in all. The cases of men that we had to eliminate were only 10 in number. These ten cases were reported by Schultze, Mönkemöller, Raimann, Lueckerath and Gudden.

Finally, we analyzed the course of the disease. We found that in half of the cases in men psychic defects are left. Death is a frequent termination of the disease, and tuberculosis is often the immediate cause. Cases of complete recovery are rather rare. Most of such cases are of alcoholic nature and the proportion does not exceed 2 per cent. In women, 14 cases are spoken of as having recovered, 6 cases are said to have shown signs of a possible recovery, 20 cases were left with psychic defects, 5 cases had marked dementia and 21 cases ended in death. Although the number of deaths and consequent defects are marked here, the number of recoveries is remarkably high. It may be noted that the majority of these cases (11 out of 14) were of alcoholic nature. In conclusion we wish to say that encephalitic processes with softening of the hemispheres was seldom the cause of death in polyneuritic psychosis. Such conditions were observed in one case that came to our notice ten years ago and we give its history below.

S. G. G., 45 years of age, married, commercial man, entered the Moscow Psychiatric Clinic November 10, 1892. A brother had infantile paralysis. The patient has always been subject to headaches, has a "quick temper" and enters readily into quarrels. He started in life as a bartender. He then opened a drink shop. He began at an early age to indulge in alcoholic drink, using

vodka and beer. He married when 25 years of age and had fifteen children, of whom only five are living. Nine years ago his alcoholic indulgences became quite excessive. Thus, in one day he drank twelve bottles of beer and a certain quantity of *vodka*. He fell asleep from intoxication and had some repeated chills, of which he had no recollection. A similar attack took place eighteen months later, although on the eve of it the patient did not drink any alcoholic beverages. Two weeks after this, a similar attack took place. His friends remarked that he looked depressed and was apathetic. He then began to indulge in alcoholic drinks to an excessive degree, swallowing daily from three to four or more bottles of *vodka*. These excesses continued during a whole year. At the end of this, in February, 1892, he had another attack of chills during sleep. In July of the same year he suddenly fell to the ground unconscious. Beginning with August 6th, he drank from four to five glasses of *vodka* at a time, not only during the day, but also at night. During the last two months, his family tried to keep the *vodka* from him, allowing him from two to three glassfuls a day. This irritated the patient and he quarreled with his family, using violent and obscene language; at times he beat those about him. His friends remarked that, about September 15, the patient began to talk incoherently. At times he forgot incidents that had taken place a few minutes previously. Thus, he often could not remember that he had just had his lunch or his dinner. Three weeks ago, he showed marked weakness in his legs; at times he urinated in his clothes. His sleep was restless. He denies having had syphilis.

On examination it was found that he was of medium size, rather corpulent, and the mucous membranes looked anemic. The tongue was coated, but was free from tremors. The pupils were normal. The liver was tender to touch. The knee reflexes were slightly exaggerated, and the cremasteric reflexes were absent on both sides. The plantar reflexes were present on both sides. The dynamometer registered 25 for the right and 20 for the left hand. There was considerable pain on pressure of the nerve trunks in the upper and lower extremities. His gait was awkward and uncertain, and he easily lost his equilibrium on turning suddenly upon his feet. His hands showed considerable tremor, especially in the left hand. The pulse was rather weak and beat 102 times per minute.

THE PSYCHIC CONDITION.—The patient knows that he is in a hospital, but cannot tell what its name is. His answers are uncertain, unwilling and short. He acts as if he were in a drowsy

condition. He is not certain what date it is, saying that it is August 17, and in a second says that it is December 15. When corrected and told the name of the day and the date of the month, he cannot remember this even for a short while. His memory is particularly defective in relation to most recent events; but he can remember with ease events of a remote date. He can remember the names of all his children except that of his fifteen-months-old child. The patient also suffers from pseudo-reminiscences. Thus, at times, he tells that he was in another hospital on the preceding day, that he took a bath and dinner there, that he dined with the physicians, that his wife was frozen to death as she was talking with him, etc. All these stories are entirely imaginary, and an hour after telling them he could not recall any of these incidents. He is listless and never starts a conversation himself.

THE COURSE OF THE DISEASE.—He slept and ate well. He did not recognize his physician and said that he was the pharmacist; he imagined that he had seen him before he became an inmate of the hospital and that this pharmacist brought him to the hospital in a carriage. This was the condition noted November 11. The next day the patient could not say what the physician's name was. In the day time he left his bed, walked up and down the corridors, looked into the other wards and tried to open the doors that were shut. When asked whether he had seen any of his friends he generally replied in the affirmative, adding that he had had "a drink" with his wife and chums. He urinated in his clothes several times. On the following day he imagined that he was in another hospital and that he was taken by the physician to still another hospital. He invited the physician to "have a drink" with him. The record for November 14-15 is as follows: He urinated in his clothes, walked about aimlessly and often demanded to be allowed to go home. At times he declared that his wife was untrue to him, while at others he imagined that she was in the hospital with him. The left hand showed marked tremor. Nov. 16-17—he walked about aimlessly during the entire day, asking the physicians at times to give him twenty cents; he wished to buy a drink, he said. He insisted that his wife was in the hospital and was flirting with some young men there. He could call the physician by his name, but insisted that he was the pharmacist. November 18-29—the gait was improved, his appetite was good and he said that his wife had accompanied him to the railroad station and had left him there. He showed a tendency to indulge in obscene jokes. November 30—his gait was more certain, but he kept on telling imaginary stories about his wife and "sprees."

He once demanded in an excited manner to be allowed to go to a drinking house. December 5-10—he keeps on telling phantastic stories, saying that he has just returned from the country, etc. His memory about time is quite good. December 11—he insisted that he had seen his wife in the hospital and that she was still there. December 20—the knee reflexes were normal and the patient showed some improvement regarding his phantastic story-telling. December 25—the improvement seems to progress. January, 1893—the improvement is still more marked, and the patient can play a game of cards with his physician. When playing the same game with a noisy patient he gets easily confused and cannot carry on the game. January 8—he is less talkative and seems more depressed. January 11—the temperature was 37.7, and he seemed fatigued. He spent some hours on a lounge. January 12—the temperature was 37.4-37.8 degrees C. January 13—the temperature rose to 39.7 degrees, but came down to 37.3 degrees. At night he was depressed and wet his bed clothes. January 20—he spoke very little, spent most of the time in bed, and the knee reflexes were somewhat more marked. He was also untidy. January 27—the tremor of the left hand was more marked, he could not hold himself upon his feet as well as he did previous to this date. The left abducens muscles were weak and there was tremor of the tongue. January 28-30—he was indifferent and drowsy; he hardly answered questions addressed to him and his eyes were half opened or shut entirely. He scarcely touched his food and passed urine in his clothes. January 31—he could not move without assistance, his eyelids were drooping, the left abducens muscle showed paresis and he was drowsy all the time. February 1—he slept most of the time, snoring, and when aroused did not answer questions addressed to him. There was tremor in both hands, especially in the left one. He could not stand up. On the following day he ate very little, his temperature was 38 degrees C., the abdomen was inflated, he slept most of the time, did not answer questions when aroused, his eyes were half opened and the left hand was quite rigid. On the following day the temperature was 37.7 degrees C. On the 4th, the temperature was 37.5-38.6 degrees C. The pulse was weak, the eyes closed, he could not swallow, was stuporous and the pulse and respirations increased in frequency towards evening, when he died. The autopsy was made February 5. The right dura mater was glued to the frontal lobe; on the inner surface of the dura mater were seen hemorrhagic clots and fibrinous masses. The right frontal lobe showed red softening and there was a focus of softening about the size of a hen's egg. This softening involved a

certain part of the temporal lobe; it also extended down to the base of the brain and the crura cerebri. There was also a focus of softening in the depth of the left temporal lobe. The ventricles presented no microscopic changes. The focuses of softening were well defined.

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LARVAL EPILEPSY.

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March 4, 1896, I was called to give an expert opinion in a case of a man who was suspected of having killed four persons and of having wounded himself. The case was of peculiar interest, as there was nothing in the history of the suspect to point to his having manifested any signs or symptoms of a morbid nature prior to the commitment of the crime of which he was suspected of being the author. I shall relate below a somewhat detailed account of this most unusual case.

The family in which the tragedy to be related took place lived on a farm in the E. county, Estnish Department, Russia. The head of the family was Martin K., sixty years of age. His wife, Maria, about fifty years of age. These parents lived in the same hut with the following members of their family: Jakoff with his wife Eva and a baby; another son Jan, twenty-two years of age and a hired shepherd, P., eleven years of age. They all slept in the same room.

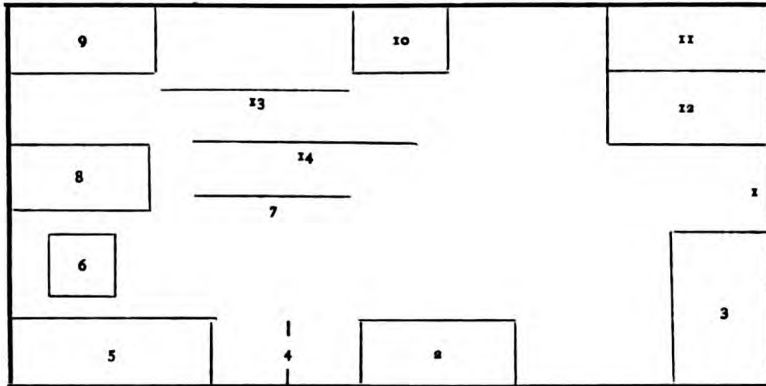
The crime that is to be described took place May 13, 1894. The suspected criminal, Jan, manifested no unusual symptoms during the day; at ten o'clock in the evening he went to see a neighbor, who lived at a distance of about one mile from the hut, and took there a package of nails. He then returned home, deposited the nails in a usual manner, took up his harmonica and played on it until eleven o'clock, and went to bed. He did not indulge in any alcoholic drink and behaved that day in a most usual manner.

During the night the Shepherd P. was awakened by a noise that frightened him. As he opened his eyes to see what was the cause of the disturbance he saw Jan bending over Jakoff's bed and calmly beating Jakoff on the head with a log of wood. Jan then left the room, went outside, where he urinated and vomited. He then came back into the room, looked at the shepherd and went to bed again.

The shepherd P. was very much frightened by what he had seen and remained still on his straw bed until he fell asleep himself.

On the morning of May 14, Martin K. called to the shepherd in a feeble voice and asked him to go to Maria's father and tell him that Maria had been killed during the night. When her father arrived he found the following scene in the room:

Maria was dead, on her bed, her face turned to the wall. Her husband, Martin K., was lying beside her, bleeding and groaning; Eva was lying on the floor, dead; Jakoff's corpse was lying on the "family bed" and Jan was sleeping on his own bed. When the authorities of the village were notified and arrived on the scene of the tragedy the following was found to be the plan of the room with its dead:



Explanation of the plan.

- 1, the door.
- 2, a weaver's frame.
- 3, a straw bed on which the shepherd slept.
- 4, a drapery.
- 5, Jakoff's and Eva's bed.
- 6, the baby's cradle.
- 7, Eva's corpse.
- 8, a table.
- 9, Jan's bed.
- 10, a cupboard.
- 11, Martin's and Maria's bed.
- 12, a stove.
- 13, the wounded Martin K.
- 14, the sleeping Jan.

Maria's father was so frightened that he could not give any information as to what the shepherd had told about the happening during the night of the tragedy. When questioned the shepherd himself could not give any satisfactory information. He added, however, to what he had already stated that he had seen Jan beat Eva on the head with a hatchet and that she tried to run away from him. The fright occasioned by this sight made him remain stark still and he fell asleep while in this condition of extreme fright.

The police authorities found the corpses and the wounded man, as described, and the log of wood and hatchet were covered with blood. The log of wood was near the door and the hatchet was on Jan's bed. Everything seemed to be in order in the room and there were no signs of any struggle having taken place. The muzzle of a gun that belonged to the family was broken off and the gun stuck with its broken end into the floor.

The authorities wished to examine Jan in the room before he was removed. When Jan woke up, however, he looked so strange and queer that he was removed from the house without being questioned about the tragedy. His wounded father was removed together with him.

Some of the witnesses, who were present when Jan was removed from the house, noticed that he had a red foam about his mouth, and that his right ear was bruised.

It was near evening when Martin and Jan K. were put on a train that was to take them both to an asylum for the insane. As they were entering into the compartment Martin said to a friend that Jan had "killed" him. After they entered the car Jan became restless and made an attempt to escape through the window. He was prevented from accomplishing the intended act and he remained in a stupid condition, hardly able to stand on his feet and refused to speak.

While Jan was under observation in the asylum the authorities of the criminal court tried to collect some information regarding this tragedy. They made as thorough investigations as the circumstances allowed, trying to find out whether Jan had had some criminal motive for the perpetration of the crime. Their investigations were in vain, however, as no motive could be found. Indeed, Jan was the favorite of the three sons. The father, Martin K., had given a third of his farm to one of the sons and he intended to divide the remaining parts of the farm between Jakoff and Jan, giving each an equal part. This was a generous way of dividing the farm, because according to the custom of the country of these people Jakoff, as the eldest son, should have inherited the whole farm. Besides, Jan was certain, in his own mind, of getting one-third of the entire farm, because Martin did not like Jakoff for having married Eva, because she was a poor girl. Maria, however, always took Jakoff's part and defended him when Martin attacked him. Martin was known as a dangerous and quarrelsome man, and Jan was not liked in the community. Although some of the witnesses testified that the members of this family were not on friendly terms, none could assert that they had ever heard them threaten one another with violent acts. One wit-

ness said that he had heard someone say that there was a quarrel, on the evening of May 13, between Martin and Jakoff. The latter was reprimanded for not having fed the horse. It was impossible, however, to find any one who had heard this quarrel himself. In a word, the witnesses did not throw any light on the mystery of the tragedy.

The physician at the asylum, who had charge of Jan K., gave it as his opinion that the patient was simulating. He gave this opinion after having observed the case during a period of five days. The patient was therefore transferred to the prison in K., May 18. From this day until May 25th the patient refused to answer any questions put to him, saying "yes, yes," in answer to every question. He was examined again June 11th. He said that he felt better in every way, but when questioned about the killing of the members of his family he said that he did not remember anything about this occurrence. The patient was brought to trial August 12, and a physician defended him on the ground that he must have committed the crime while suffering from post-epileptic delirium; he also claimed that from May 14 to May 25 the prisoner must have been under the influence of post-epileptic effects. The trial was then postponed until September 28. On that occasion the prisoner was again defended by three physicians, who claimed that a further study of the case was necessary before a satisfactory conclusion could be arrived at. The court granted the request of these physicians and the patient was transferred to an asylum for further observation. The prisoner was there studied during a period of two months, but when the case was again called for trial, December 7, the physicians stated that no results had been obtained, and asked to have the patient transferred to a clinic for mental and nervous diseases. This request was granted, and Jan K. was transferred, January 22, 1895, to the Urieff Clinic of Mental and Nervous Diseases.

Jan was 22 years of age on the date of his admission to the clinic. He was in good physical condition and weighed 175 pounds. He had a good appetite and slept well, but suffered from occasional headaches, which at one time lasted about a week. These headaches were relieved by ordinary doses of potassium bromide. On the whole, his condition was the same as was that observed when he was in the asylum. The only additional peculiarity was a certain lustre of his eyes which I call *metallic shine*. It is impossible to describe this peculiarity of his eyes, but it may be stated that this characteristic of the eye is not found in ordinary cases and that it is proper to the epileptic only.

During his stay in the clinic Jan was closely observed by the

physicians and the nurses. He always kept aloof from the other patients and never started a conversation first; when questioned about anything he always answered in monosyllables and with a certain amount of caution. He did not make friends with anyone, did not quarrel with anybody and obediently worked with the other patients; in fact, he seemed to be pleased to have some work to do. When he was deprived of the privilege to go to his daily work, in order to have him closer under observation, he did not complain or show any dissatisfaction with the new change. His mood was always the same—sad and depressed. He never complained of anything or of anybody, and never asked for any sympathy. Whenever attempts were made by the physicians and nurses to remind him of the crime, he declared that he knew nothing about it and that he could not understand how such a tragedy could have taken place. He said that the crime must have been committed by robbers and that they must have wounded him. He did not insist, however, on the probability of his supposition. He was much astonished when told that he was suspected of being the author of the crime. He said that it was preposterous to suspect him of being the author of this frightful deed, as he had no motive whatever for perpetrating it. Besides, he said, it was a physical impossibility for *one person to kill four people*. However, he remarked, if there was sufficient evidence against him, no matter whether he was guilty or not, he would be sent to Siberia. He did not see what could be done about the matter. He saw in it an extraordinary combination of circumstances and he would have to accept his fate. Further examinations and questioning of the patient did not add to the above information. The patient declared again and again that he knew nothing about the crime. Particular stress was laid on the broken gun that was found in the room, but he said he knew nothing of it. His behavior when being questioned was most peculiar. He did not seem to be affected when talking about the tragedy; he was rather calm, composed and reserved. He spoke when invited to do so, but he engaged in the conversation about the crime most unwillingly. A noteworthy detail of his behavior was a marked degree of self-possession; he seemed to be master of himself. He said that he was perfectly healthy, that he had been ill only once, when he was in the military service. When asked to explain his lack of memory during the few days following the crime he said that it could be explained by the fact that his head had been wounded by the robbers. In March, he became restless and said that he was tired of being in the clinic and that he did not wish to drain his brother's pocket, as his brother was paying for his treatment

there. He was going to be sent to Siberia anyway, he added, and could see no sense in his brother spending money on him uselessly. He became more and more restless as time went on, and in April he made frequent demands to have his case hastened at court. He also insisted that the chief physician tell him whether he (the prisoner) was insane.

On the whole, Jan gave the impression of being an ungrateful and sly man of low intellect, although not stupid. When he first entered the clinic he seemed to be stupid at first sight; on close examination, however, it was found that he was very observant, understood his position perfectly well and tried to appear ingenuous and stupid. With all, his behavior was very respectful and quiet. As for the results of the study of the case, no positive conclusions could be arrived at. Although the results were negative, one is not in a position to say that the prisoner was a responsible person at the time of the commission of the crime, if he was the author of this crime. It may further be supposed that even if he was subject to masked epilepsy outside the clinic the favorable surroundings and conditions in the clinic prevented any further manifestation of the disease while he was under observation here. Besides, he had an extraordinary talent for simulating disease. This circumstance was a marked hindrance in the matter of arriving at positive conclusions regarding his condition. Thus, for instance, in 1890, while he was a patient in the military hospital of W., he simulated an attack of chronic consolidation of one of the upper pulmonary lobes. The physicians there, who are known for their skill and erudition, were led on to uphold this diagnosis, although under ordinary circumstances such an affection is one of the easiest to be diagnosed. Regardless of the distrust the patient inspires one cannot help concluding that he must have been in good physical and mental condition since 1890. Besides, there is no nervous or psychiatric history of the other members of his family; they are also free from alcoholic and criminal taints. The physical formation of Jan was normal. The only mark he had was a scar on the left forehead, about three centimetres in length. The patient said that he had been hit on the left forehead when a child. Beneath this scar there is a marked depression. It is possible that this injury of long standing had something to do with the epileptic manifestations, if he was subject to such manifestations. There was nothing else peculiar about his personality, except the unusual metallic gloss of his eyes, which I spoke of above.

I wish here to make some remark about the peculiar gloss of the eye of the epileptic. It is difficult to characterize by words this

peculiar condition of the eye. The best way in which I can define it is by saying that the eye of the epileptic presents a *blunt metallic shine*. This peculiarity is particularly marked in young epileptic subjects. I made a special study of this condition and convinced myself that this peculiarity is found in no other affection. I can even make a correct diagnosis of epilepsy by examining the external appearance of the eye; the presence or absence of this special gloss decides me on the presence or absence of epilepsy. Some of my pupils and colleagues, who have studied the subject as I have indicated it to them, claim, with me, that a diagnosis of epilepsy can be made as I indicate. Thus, when Jan K. was brought to the Urieff Clinic, my associates declared that he presented this peculiar gloss of the eye. This was my own opinion in the matter.

If this condition of Jan's eye is coupled with the condition he presented in the W. Hospital (May 15 to 18, 1894) one is bound to conclude that he was an epileptic subject. During these days he acted as if he were suffering from post-epileptic shock. The only reason for belittling the fact is that he showed an aptitude for simulation. Had he been an ordinary patient, without having committed the crime, his clinical history would have caused no doubt in the minds of his physicians; he would have been pronounced an epileptic. Further, if one assumes that he was the author of the crime, one must admit at the same time that he was an epileptic. For, none other than an epileptic could commit such a frightful crime without being unconscious of what he was doing. His behavior after the crime was committed and his condition in the asylum could then easily be accounted for. The most thorough search for a possible motive that he might have had in committing the crime proved negative. Consequently this criminal act cannot be coupled with the patient as a sane man. Besides, it is rational to admit that such frightful crimes can be committed either by insane persons in general or by epileptics in particular. It is impossible to conceive how Jan K. could have killed four persons without his having been in a condition of post-epileptic delirium. He could not have killed them in a fight. If this had been the case, there would have been some evidences of a struggle on the part of the victims. If one were to suppose that he had killed the victims after premeditation and decided on committing the crime while they were asleep, then the question arises why did he not choose a more fit instrument for killing than is a log of wood, which he used? Finally, had he committed the crime in cold blood, as an ordinary criminal, he would not have gone to sleep in the dead chamber, among the corpses. It is a well known fact

that even the most hardened criminals flee from the sight of their dead victims. The crime here described is stamped by a marked peculiarity which is proper to crimes committed by either the insane or by epileptics. This peculiarity consists of *a marked number of victims, a badly chosen weapon* and the fact that the *murderer went to sleep among the corpses of the four people he had slain*. None but an epileptic is capable of killing several persons at a time, his own relatives, without having any motive for doing so. *One must be in a state of unconsciousness in order to commit such a deed*. Everything in this case argues in favor of Jan's having been in an unconscious state at the time he committed the crime. How else can one explain his having gone to sleep immediately after the commission of the crime? The most consummate homicides leave quickly the place of crime not only in order to escape the hand of the law but also because of a natural repugnance to remain among corpses. The most consummate simulator would hardly have the courage to have put himself in the condition in which Jan was found when the police authorities arrived at his house. It can hardly be supposed that Jan K. knew what was proper for an epileptic to do after the commission of a crime like the one of which he was thought to be the author. His own wound was slight; had he intended to simulate he would have inflicted on himself a more serious looking wound. Then, his behavior while he was on his way to the asylum W— seemed characteristic of an epileptic in a post-epileptical state. Finally, his behavior inside the asylum walls must also be taken for a typical post-epileptical behavior. The situation can be explained only when it is accepted that the prisoner, when committing the crime, acted under the influence of an epileptic shock. He was perfectly quiet and in an ordinary condition on the evening preceding the commission of the crime. He got up at night, suddenly, without having any motive for doing so, took a log of wood and a hatchet, and beat his relatives to death with these weapons. At least this is the account given by the frightened young shepherd. Such an act is characteristic of an epileptic. If his victims begged for mercy he was deaf to their prayers. His epileptic fury must have been intense to have sped him on rapidly in the infliction of so many wounds in so short a time. The enormous force that was required for the infliction of the deaths, and which Jan must have used, also points to his having been in an epileptic condition. Another point in favor of the theory that Jan was acting under the influence of an epileptic shock is the following circumstance: Jan's father was only wounded, and the shepherd and a little nephew, who were in the same room with the other victims, were not hurt.

Had Jan been in a normal condition and had he had some motive for the commission of the crime, he would have killed every living being in the room. Here, on the contrary, we see that the man went to lie down as soon, apparently, as he became free from his blind fury. The onset as well as the termination of the furious attack seem to be quite characteristic of an epileptic attack. It was sudden in both instances, and as soon as it ceased Jan left his onslaught on his father unfinished. The weapons he used were apparently the first articles that came to hand, without having made any choice whatsoever. The young shepherd related that Jan broke the gun when he left the cottage and went out to vomit. All this picture is certainly characteristic of an epileptic's deed. As for the wound on Jan's own head, he inflicted it on himself while he was striking his victims. It is well known that epileptics fall into a condition of prostration after severe attacks of epilepsy. It is just in such a condition of prostration that Jan was found after the commission of the crime. Indeed, his normal condition did not manifest itself until some few days later, while he was in the W— asylum. He began to act and talk rationally only on the 18th of May. It is not easy to account for his queer behavior on May 25, when he was examined by the judge. The only way to explain this is to accept the supposition that he had had a second epileptic attack of a masked nature. If one were to suppose that he simulated on that day, the supposition does not preclude his having sustained an epileptic shock before he committed the crime, May 13.

Every psychiatrist who reads this paper must admit that the patient must have been an epileptic or that he was afflicted with some psychiatric disease at the time of the commission of the crime; that he must have been in an unconscious state at the time he slew his victims. One might suppose that he was afflicted with mania acutissima or mania transitoria. But Jan's condition after the commission of the crime does not justify this supposition. Another supposition may be made that he committed the crime while having a frightful dream, imagining, perhaps, that he was being attacked by robbers. But according to the accounts of the shepherd Jan did not act as if he had waked up suddenly and was terrified by what he had done. From the accounts at our disposal there is no indication of his having waked up suddenly and realized his condition. If, however, this did take place and Jan, on realizing his condition, decided to simulate a post-epileptic state, then he is the most consummate simulator known to the medical profession. None other than an epileptic could have acted as he did after the commission of the crime. A person afflicted with any

other form of mental affection would not have gone to sleep as calmly as did Jan after he had slain his victims. If he was a simulator, then have I not met with a similar case either in practice or in literature.

Considering the negative history of the case in so far as his being subject to epilepsy is concerned, it is very difficult to draw any positive conclusions. However, as has been remarked above, his freedom from epileptic attacks previous to his commission of the crime does not at all preclude the possibility of his having had an epileptic attack on the night when the crime took place. Another question that naturally arises is the following: He had no attacks either before the date of interest here or after that date, while he was under observation; is it possible, then, that he should have had one single attack on the night when he committed the crime?

The great interest attached to this case is the fact that cases like this one are quite rare. If the genial criminologist, Lombroso, has made a right supposition that masked epilepsy is the cause of crime in many instances, then this case is an additional proof of his hypothesis. As is well known, his hypothesis on this subject is not generally accepted by scientists. Yet, I must admit that his explanation of some crimes, on the ground of masked epilepsy, is quite a plausible one. At least, the case here related is certainly one that fully supports his views. If the case appears more obscure in its details than it should be, there is a certain reason for this; the people involved in the case were Estonians, did not speak Russian and their testimony was obtained through an interpreter. However, I considered that we had, in essence, as much information regarding this case as was possible to have. When I was called by the court to give my expert opinion in the matter, therefore, I had no hesitation in declaring that the accused, Jan K., on May 14, 1894, was in a pathological condition. I explained that if one were to admit that he was in a normal condition on the night the crime was committed, it would be impossible to explain the commission of such an enormous crime and the behavior of the criminal after the commission of the crime. The Court of Justice accepted my views and the prisoner was committed to an asylum for further observation.

We had this man under observation until July 14, 1899, when he died of pericarditis. During his entire stay in the asylum we could not find anything abnormal about him, except that he was markedly depressed in spirit. As can be seen, we gathered no additional information about this case during the long period of time, from 1894 to 1899. The only sign that could be called posi-

tive in favor of his having been an epileptic is the peculiar metallic gloss of his eyes, of which I spoke above. I was familiar with this sign early in the history of the case; during the six years of observation particular attention was given to the study of this unique sign, and I feel more confident now than I ever did before that the presence of this sign is a valuable indication of the presence of epilepsy. This sign applies to essential epilepsy only.

The peculiar aspect of the epileptic's eyes has long since attracted the psychiatrist's attention. Thus, Kraepelin was among the first observers to speak of the "epileptic physiognomy." He mentioned, among other characteristics of this physiognomy, a broad forehead, a large nose, high cheek-bones, thick lips, anemic eyes and unusually large pupils (*).

You know that lustrous eyes are encountered in other forms of disease than epilepsy. Hysterical and maniacal patients present a similar peculiarity. Certain conditions of cheerfulness and excitability may also occasion a certain lustrous shine of the eyes. The "metallic gloss" of the epileptic's eye, however, differs from all others and is peculiar to itself. In the maniac the eye has a certain sparkle that makes it look brighter than usual and in the various other conditions that are accompanied by a change of the lustre of the eye the changes are also distinct and differ from one another. In the epileptic, as has been remarked, the characteristic condition of the eye is a "metallic gloss." I realize the difficulty in which I find myself when trying to describe by words a condition that does not lend itself to such a description. I tried to illustrate my idea by taking photographs of epileptics, but, as could be expected, my attempt was futile: it is impossible to express this condition in a photograph. Personal observation alone can convince my colleagues of the truth of my statement. My colleagues, whose attention I called to this sign, and myself have had no difficulty in diagnosing epilepsy when being guided by this "metallic gloss" alone. I do not recall one case in which this gloss was found and which did not prove to be an epileptic. Even medical students, to whom this sign was pointed out as a diagnostic guide, never failed to make a correct diagnosis of the cases as explained. It is hardly necessary to remark that we tried control experiments by examining for diagnostic purposes patients who were not epileptic, but who presented certain glossiness of the eye as well as epileptics who did not have the described peculiarity.

I wish to impress the fact upon the reader's mind that the sign

*Psychiatrie, Part II., p. 396.

in question is characteristic of essential epilepsy only. It does not exist in Jacksonian epilepsy, or in subjects suffering from cerebral tumors and fits; it is also absent in subjects who have idiocy or imbecility with convulsions. There are still other epileptoid subjects which are free from this sign. I refer to some cases of hydrocephalus and cerebral tumors with convulsive manifestations. The convulsions here are simply partial manifestations of the general disease. Such patients do not have the "metallic gloss" of the eye. This sign applies strictly to those suffering from essential epilepsy.

In my opinion, this gloss is due to a peculiar poisoning of the system. It is probable that in these subjects the same intoxication that causes the fits also causes the peculiar "metallic gloss" of the eyes. The enlargement of the pupils may be due to the same poison in the system. It is well known, for instance, that atropine poisoning causes enlargement of the pupils, and it can easily be imagined that some other poisonous matter in the system may also cause dilatation of the pupils. I support this view by the fact that after an epileptic fit the "metallic gloss" of the eyes is lost. This is particularly true after a severe fit. I have endeavored to determine the degree of the gloss at various stages, before and after the fit; this was a difficult matter to handle, however. It must be remarked that the eyes of old epileptics do not have this peculiar gloss. However, there are very few epileptics who are over sixty years of age. The study of this sign should be made on young subjects. A thorough study of this question may prove of some value.

When applied to my case, this sign was of great importance, as the history was peculiarly negative in all respects. Very probably Jan K. had some fits of giddiness and of imperceptibly slight losses of consciousness, but he did not pay any attention to this disturbance. Indeed, while he was in the clinic he did complain of having giddiness and headaches, but we had no confidence in his statements. The only positive sign of his being an epileptic was the "metallic gloss" of his eyes.

From a medico-legal standpoint this sign has a great deal of clinical value. I do not recall having read of a case similar to the present one. If more attention were paid to this particular sign it would be found that undiagnosed criminal epileptics are not rare.

I feel very much indebted to the R— Court of Justice for having enabled me to study this very interesting case.

CONTRIBUTION TO THE STUDY OF SUB-CORTICAL ALEXIA AND SIMILAR DISTURBANCES.*

By P. A. PREOBRAJENSKY, Privat-Docent.

Alexia is often met with during the course of the various forms of aphasia. We shall consider here sub-cortical alexia only. This form of alexia is termed by the Germans *Wortblindheit* and by the French *cécité verbale pure*. As is well known, this term implies a loss or impairment of the faculty of reading. To be more precise, the patient thus affected is unable to understand written or printed letters, words, signs, formulas, figures, etc., although the sight remains normal. This inability to read is often accompanied by verbal deafness, verbal blindness, optic aphasia and generally also by right hemianopsia (v. Monakov) (1). In 1838, Trousseau was among the first to describe this affection. Speaking of his patient, Trousseau said that the latter presented an independence of faculties which had always been considered inseparable. He added that no psychologist would have considered it logical to separate the faculty of reading from that of writing. He concludes by saying that what psychology did not have the courage to do had been accomplished by disease (2). Kussmaul (3) has also devoted a monograph to the study of the disturbances of speech. Within the

*Journal S. S. Korsakova, Book 4, 1902.

last few years a number of authors have devoted themselves to the study of this question, and up to the present day there are recorded about thirty such cases. Thus, this symptom-complex belongs to those not sufficiently known and incompletely understood. The study of this question is therefore desirable and I record below two such cases.

Case I.—M. G., 50 years of age, entered the Staro-Ekaterinskaja Hospital, December 18, 1901, complaining of weakness in the left limbs.

He often indulged in alcoholic drinks (vodka). He denies having had syphilis. He is a day laborer. Thirty years ago he had some typhoid disease and was treated for it in a hospital. He was treated in a hospital for the second time three years ago, after he had had a fall from a tree and had injured the small of his back. The present disease came on at about the middle of December, 1901. Without having had any loss of consciousness, he noticed a gradual onset of weakness in his left limbs. The arm was affected first and the leg later. He came to the hospital after he had had this weakness for three days. He had no vomiting, but he suffered from headache.

The physical examination showed that the lungs were normal, the heart was also normal; the pulse was 48 per minute; the liver area was slightly enlarged. The tongue was slightly coated and deviated to the left. There was paresis of the lower branches of the left facial nerve. The pupils were equal and reacted to light. The right pupil reacted better than did the left one. There was left hemianesthesia of all forms. There was left hemiplegia and the patient could neither stand up nor walk. The knee reflexes were absent. The reflexes of the upper extremities were marked. The patient complained of a feeling of heaviness in the head and of headache. The attention and the mental condition were dull. The arteries were stiff and tortuous.

Two days after the examination, December 21, he could walk if supported.

The psychic trouble was first noticed on the following day, December 22. The patient was absolutely unable to read even letters printed in large type. He succeeded with great difficulty in spelling the two words "Rousskia Vedomosti." In reading, he substituted one word for another and asked to be excused from reading because he could not make out anything, he said. Under dictation, he could write correctly and with ease. He now presented left hemianopsia and the weakness in the left extremities still persisted.

December 23. The patient could pronounce words perfectly well and correctly. He could understand everything said to him. He could repeat correctly every spoken word, even when it happened to be unfamiliar to him. He could name without any difficulty everything about him. He could see and name objects even of small size and at a visible distance. He could not read large sized type, however. In his attempt to read, he spelled the words with difficulty or was even unable to spell them. At times, he guessed at the last part of the word, if he succeeded in recognizing its first part. Of course, he often made a wrong guess. It was impossible or difficult for him to copy printed language. If he once succeeded in reading a word, however, he could write it with the utmost ease, and correctly. He could write correctly and with ease under dictation. When asked to read what he had just written he could not make out his own writing, particularly was this the case when he was interrupted, and he forgot the words he was writing. He could make out separate figures, although this was done with some difficulty. Whatever he succeeded in reading he could repeat and remember without any difficulty. He had difficulty in making out sketches, particularly when they were somewhat complicated. In his attempts to recognize drawings he often turned them up side down. When looking at a picture he had difficulty in understanding what it represented.

December 24 He began to read with more ease. He could make out some letters if they were of large size, but he had difficulty in making out letters one centimetre large. Letters of smaller size he could not make out. He copied with ease geometrical figures, such as squares, circles, diagonals, etc. He could copy from the book only that which he had read mentally or aloud; otherwise he could not copy. His sight was good. He could see small objects, the size of pins; he could name them and write out their names. Written language was also difficult for him to read. When following the tracing of the letters he could frequently guess the written word. It was more difficult for him to make out letters printed in red than those printed in black. He had no difficulty, however, in distinguishing one color from the other. An examination of his visual field gave the following results:

	Right Eye.	Left Eye.
Upwards,	25 degrees.	45 degrees.
Downwards,	75 "	75 "
Outwards,	85 "	20 "
Inwards,	15 "	55 "

The hearing was normal in both ears.

The patient improved gradually during his stay in the hospital. He said that he never had any trouble like the present one until the recent illness. His memory improved and he could take a walk in the hallway. He could find his ward and bed without any difficulty and he was conscious of his surroundings. He presented no psychic disturbances.

January 24, 1902. He could walk well, although limping somewhat with the left leg. The movements of the upper limb were weak. The left anesthesia persisted to a certain degree. The knee reflexes were absent. The left hemianopsia was still present. Consciousness was perfectly clear and the patient was generally in better conditions than he was when admitted to the hospital.

January 25. The left hemiparesis and hemianopsia still persisted. The left hemianesthesia persisted to a certain degree, particularly in reference to the muscular sense. Thus, when asked to touch his ear he carried his hand to the occiput and then gradually brought the hand over the left ear. He could now make out with some difficulty more or less large type and at times when reading, he interposed words that were not printed on the page. He still had difficulty in reading letters printed in red ink. During his stay in the hospital he did not have any rise of temperature. He was kept on mercurial and iodide treatment while he remained in the hospital.

Case II.—G. D., 45 years of age, manufacturer, was brought to the Staro-Ekaterininskaja Hospital, July 17, 1901. On admission, he was unconscious. He regained consciousness the next day, but remained in a condition of mental confusion. The following is the history he gave us.

He cannot tell under what circumstances he fell ill and does not remember what happened to him to make him ill. He can remember some things about his past life. When twenty years of age, he contracted syphilis; he was treated for this in the Mjasnitzkaja Hospital. He then served in the army five years and subsequently engaged in work in silk factories. He indulged moderately in alcoholic drinks (vodka), and was intoxicated only at rare intervals.

As no one came to visit the patient it was impossible to obtain any further information.

July 18. The patient was moderately well nourished and of medium stature. He presented confusion of ideas and did not realize his surroundings. He did not easily understand what was said to him and made answers with difficulty. He was restless in bed, from which he fell out several times. The pupils were small and did not react well to light. *The facial and hypoglossal

nerves were in good condition. The speech was normal and there was complete left hemianesthesia. The muscles of the left upper limb were in a condition of tension that changed from one group of muscles to another. The muscular movements of the left limbs were distinctly ataxic. The knee reflexes were marked on both sides. There was no albuminuria. The temperature was normal.

July 22. The left limbs presented paresis, ataxia and complete loss of all forms of sensibility. There was mental confusion and the patient gave irrelevant answers to questions. His attention was easily tired. This trouble caused difficulty in the examination of his sight. Very probably he had left hemianopsia.

July 29. There was marked confusion of ideas and he did not understand his surroundings. The sight seemed to be impaired. He did not see more than one finger, no matter how many fingers were shown him. The left knee reflexes were exaggerated.

August 10. The mental condition was improved and the patient seemed somewhat brighter.

August 20. He could not stand up without assistance; when put on his legs he always fell on the left side. There was muscular weakness and rigidity on the left side. Consciousness was improved. The eye grounds were normal. There were extensive periosteal growths on the shin bones.

September 12. There was marked left hemianopsia.

September 14. The patient could stand on his feet without being supported.

September 17. He could walk without any help.

September 29. The pupils were moderately contracted and reacted to light and accommodation. The movements of the eye balls were normal. The patient could distinguish all colors. There was marked left hemianopsia and general narrowing of the field of vision. This was particularly limited in the upward direction. The field of vision was more limited for the left eye.

He easily named objects shown him, even when they were of small size and at a distance from him. He could see everything within his field of vision. He had some difficulty in making out ordinary printed words. At times he did not recognize printed language when the page was turned upside down. He said on such occasions that the printed language was a foreign one. As a rule, however, he recognized when a page was turned upside down. He could recognize separate letters. He did not remember what he had read a moment previously and often read the same line twice or three times. He could not remember where he had stopped reading, could not find the line he read last and did not even know whether it was at the top or at the bottom of the page.

If he did remember some words of what he had read, they conveyed to him no idea of the sense of what he had read. They were simply separate words, such as some verbs and adverbs. He could not read what he had written himself. At times, he could spell out the words of his own writing and recognize them as having been written by him. Spontaneous writing was quite good; he could also write correctly under dictation. He could also write with ease whatever printed words he succeeded in reading. Copying of geometrical figures was not always easy and it was impossible for him to make even the crudest copy of any drawing. Spontaneous drawing was poorly done. It was difficult for him to recognize drawings. He mistook a drawing of a dog for that of a man, and a drawing of a doll for that of a man. At times, he failed altogether to recognize drawings shown him. He could make out some details of a picture, but could not understand what the whole picture represented. The patient himself expressed astonishment at being able to see the snow fall in the street and yet to have difficulty in making out the subject of a picture shown him. He could easily recognize play cards shown him. The hearing was impaired on the left side. He could not hear the ticking of a watch put close to his ear shell. With the right ear he could hear the ticking of the same watch at a distance of from 2 to 4 inches. He complained of continuous parasthesia in the left ear. The sense of smell was impaired. The patient could not recognize by smell any of the substances he was made to smell. The sense of smell was more impaired on the left side. The sense of taste was in fairly good condition. The patient recognized by taste all the substances put on his tongue, making a mistake only once: on the left half of the tongue he mistook salt for sour. The other cranial nerves seemed to be in good condition. There was no disturbance of speech. He spoke correctly, could repeat what was said to him, understood everything said to him and could name everything about him. Consciousness was normal. Imagination and reasoning was normal; he could make correct mental calculations. The memory was impaired. This dated since the beginning of the disease. He repeated every day the same sentences in reply to the question how he felt, forgetting that he had used them in the same manner on several previous occasions. Thus, the daily answer consisted of the phrase "the ear is plugged and the eye is blind." When asked how long he had had the trouble, he always answered that it took place just before the physician's visit, or the day before. At times, he forgot that the physician had just been through the ward and inquired of his neighbors when the physician was expected. He did not remember the visits of his friends on the preceding day

and could not give any account of the manner in which he had spent the previous day. He could not remember the color of the bed-spread on his bed. Six months after his admission to the hospital it was still necessary to accompany him when he had to go anywhere outside of the ward, as he could not remember how to return back to it. His memory began to improve somewhat after this period. He recognized his bed by a shrine hung on the wall near it. Soon after he got up from his seat he forgot where it was. He thus often sat down in another patient's seat, imagining that it was the same in which he had sat a few minutes previously. He did not remember how many times a day he took medicine, but he knew that he was taking it in the form of drops. He could not tell anything regarding the beginning of his illness and had no idea about the duration of his stay in the hospital. He remembered having worked in factories the greater part of his life, but he did not know what work he was doing before he fell ill. He did not know the location of a well known tower (Soukharieva Bashnja) and could not tell its color. He did not know in what part of Moscow he was at the time he was being examined. The memory of faces was somewhat better. His sense of orientation was good; he avoided obstacles in his way; now and then, he knocked up against the furniture with the left hand or foot. He had no delusional or incoherent ideas. He thoroughly understood his condition and was anxious to know whether he could get well. His behaviour to his surroundings was perfectly normal; he had neither illusions nor hallucinations. At times, he seemed to have some dim remembrance of having been in the surroundings which he saw. His gait was cautious and he limped somewhat on the left side. He had left hemianesthesia of all forms of sensibility; he did not know, for instance, the position of his left hand and what it was doing. The knee reflexes were more marked on the left. The reflexes of the upper extremities were in good condition. There was no muscular atrophy in any of his limbs. The internal organs were in good condition. The blood vessels were somewhat tortuous and stiff to the touch. The urine was free from albumen. During his stay at the hospital he was treated with mercury and iodides. The temperature was normal during his entire stay in the hospital. The field of vision was as follows:

	The right eye.	The left eye.
Upwards,	25 degrees,	15 degrees.
Downwards,	75 "	75 "
Outwards,	70 "	5 "
		(towards the inner side).
Inwards,	22 "	55 "

The following, then, is a recapitulation of the two cases cited above:

The first case, which was right handed, developed, during the course of several days, left hemiparesis, hemianesthesia and hemianopsia; he also had alexia literalis et verbalis (especially when trying to read letters printed in red ink); he did not present any aphasia and his memory was good.

The second case, which was also right handed, presented the following traits; left hemiparesis, hemianesthesia and hemianopsia; characteristic alexia, loss of topographical orientation and inability to find the line he was reading when interrupted while he was reading; he was unable to understand the subject represented in pictures and had loss of memory, particularly for recent events.

As regards the combination of the enumerated symptoms, it is well to recall that hemianopsia is said to be an inseparable accompaniment of alexia. Up to this date, there has been no recorded case of alexia without an accompanying hemianopsia. As regards the hemiparesis, the German writers have not yet described it carefully in this connection (for instance Monakow); the French (Grasset, for instance), say that ordinary alexia is generally accompanied by right hemiplegia. Nor is hemianesthesia mentioned by writers; yet both my cases presented this trouble. Further, it is generally admitted that pure alexia is always accompanied by *right hemianopsia*, which depends on a lesion of the *left* hemisphere. In both of my cases, on the contrary, there was doubtless a lesion in the *right* hemisphere, in each case respectively; as has been stated above, both cases were right handed. In this respect, our cases differ from those described by others.

There can be no doubt that there were focal lesions in both cases; very probably the localization of the lesions is similar in both cases. Considering that the patients presented hemiparesis, hemianesthesia and hemianopsia at the same time, it must be concluded that the lesions were seated in the internal capsule. The exact seat was probably its posterior part. The sensory ganglion and the optic tracts of Gratiolet were probably involved. Besides, there must have been some involvement of the white substance of the gyrus angularis, the middle occipital and the fasciculus longitudinalis inferior as well as of the short and long association fibres in this neighborhood.

It is possible that in the first case the focus extended from the internal capsule to the cortex. In the second case, the lesion was hemianesthesia. The extension of the focus to the cortex was probably more marked in the posterior part of the internal capsule; this supposition is justified on account of the persistence of the

probably less marked than in the first case. It is not altogether wrong to suppose that there was such an extension. As the second case presented disturbances of hearing, it is possible that he had an involvement of the corpora quadrigemina (?). This is only a supposition, however, as the deafness may have depended on other causes.

In the first case, there was probably a thrombosis of the right Sylvian artery. It is difficult to say what cause was responsible for the trouble in the second case, as no history could be obtained. Very probably, however, disturbances of cerebral circulation were at the root of the trouble.

Each of the two described cases is complementary to the other and explains some clinical features that could otherwise be the sources of some controversy. Thus, it cannot be denied that there must be some relation between hemianopsia and difficulty in reading of the kind here considered. Nevertheless, we see that the first case, while having a larger field of vision, presented a more marked degree of alexia in the reading of separate words. The second case, with a smaller field of vision, had less difficulty in the similar kind of reading. It is of further interest to remark the following: The first patient could not make out pictures at first, but he can understand their meaning now. The second case, on the contrary, can make out pictures less now than he did in the beginning. Yet the hemianopsia in both cases is the same now as it was in the beginning of their diseases. Further, the first patient can easily find his way, recognizes his ward and can go about without any assistance. The second patient, on the contrary, cannot find his way and must be accompanied wherever he wishes to go.

Evidently, the inability of the second patient to find his way does not depend on his hemianopsia. Yet, without having the first case to show the contrary, it would be legitimate to suppose that the hemianopsia played an important part in causing the difficulty in finding his way.

Finally, the first patient does not lose words and lines in reading, although he has great difficulty in the act of reading. The second patient, on the contrary, continually skips words and lines, without being able to find them again. Yet he reads quite well. Essentially, however, the conditions are similar in both cases, that is to say, the process of reading is difficult or impossible in both cases.

Consequently, this latter disturbance does not depend on the hemianopsia.

To conclude, it may be interesting to cite Monakow's idea regarding the coexistence of hemianopsia and alexia. According

to him, alexia does not exist when hemianopsia depends on a lesion of the optic tract; the same is true of hemianopsia depending on lesions located in the posterior half of the hemisphere, as around the calcarine convolution. Considering the facts we have in hand, we may conclude that in our cases the alexia depended on the hemianopsia only to a very slight degree.

Similar independence of manifestation is applicable to other features observed in the two cases. Thus, in the second patient, the equivalent of the isolated alexia is the inability to understand the subject of drawings as well as that to draw spontaneously. These disturbances may be met with without an accompanying alexia. Charcot (4) and Monakow observed such cases with analogous focal lesions. While quoting the cases of these authors, it is not intended to convey the idea that in the two cases here considered these difficulties in understanding pictures or in drawing were necessarily due to independent focal lesions. It is intended only to submit a logical supposition.

The loss of memory in the second case concerns not only visual impressions. He also forgets what has just been said to him, his surroundings, what he has done a few minutes previously, etc. He can remember faces to a certain degree. The question naturally arises whether this loss of memory is a coincident symptom. I consider, however, that the loss of memory in this case is due to an organic cerebral lesion, that is to say, to a focal lesion. Although the marked loss of memory suggests the possibility of its being akin to that found in the polyneuritic psychosis of Korsakoff, it is easily differentiated from the latter by the absence of corresponding psychiatric symptoms. Besides, the etiology of the disease is not the same. Alcoholism and infection were not found in this case. In the first case such a loss of memory would be easier explained; the first patient did not present, however, such a loss of memory. Cases similar to the second case are recorded in literature. Hinselwood (5) reports a similar case of a woman. Unfortunately she was illiterate. She had right hemiplegia and hemianopsia. She could not find her way, recognize houses or faces and she stumbled over people and objects. Such cases are not very rare and their descriptions can be found in text-books. It is stated that lesions of the optic centres may cause trouble in spacial orientation. This trouble is considered as a variety of psychic blindness.

V. Monakow's description of this trouble is as follows:

"The patient loses the faculty of finding his way in his room or on the street. He loses the sense of the relative position of the furniture in his room, not knowing where are placed the sofa, the

dining table, etc. He gets lost in streets well familiar to him, although he can see clearly objects before him and can recognize them as such." (p. 473.)

The description of this disturbance resembles so much that found in my second patient that it reads as if it were a description of his trouble.

As regards the cause of this trouble, it is evident that loss of memory plays a most important part here. Disturbance of orientation properly speaking is not the cause. It may be that the trouble is due to anterograde and at times to retrograde amnesia. Consequently, in this case, like in those reported by others, the present trouble represents a partial psychic blindness.

Isolated alexia may relate to letters (Hinselwood) (6), syllables or words (Merjeevsky) (7); Hinselwood (8) published some cases which had difficulty in reading signs, formulas, etc. Charcot (9) also published such cases. Patients have been known to lose the faculty of recognizing musical signs, etc. The degree of this loss may vary with the case.

The peculiarity of my cases is the following: the lesions are situated in the right hemispheres. The authors who have reported similar cases speak of lesions in the left hemisphere. Yet my patients are right handed. In order to understand these facts it is necessary to recall the mechanism of isolated alexia. This symptom-complex is in some relation with partial psychic blindness and depends on lesions in the optic region. The long and short association tracts are particularly involved in the region of the second occipital convolution and the gyrus angularis.

Lissauer (10) considers that an impression can be said to consist of two acts: 1, apperception properly speaking and 2, association. The latter is concerned in the construction of the idea. Consequently, it may be supposed that psychic blindness can be caused by a disturbance of association without an impairment of apperception, from a disturbance of both preceding, or from a disturbance of apperception. This latter condition Lissauer follows by a question mark. According to some authors, as Willbrand (11), Nothnagel, there are special cerebral centres for apperception and for association of letters, signs, etc. The occipital convolutions are said to be the seats of these centres. Monakow does not accept this idea, yet it seems rather logical. Besides, clinical work seems to point to the fact still more forcibly and we are led by them to suppose that there exists even more than one single centre as above explained. We are led to presume that there must be a centre for signs, letters, figures, etc. The cases of Hinselwood and Merjeevsky seem

to justify this supposition. Indeed, those patients could distinguish separate letters, but were perfectly blind to words. The opposite manifestation was also found.

These considerations point to a great complexity of construction of the optic apparatus. An injury to one of its paths may be followed by various clinical manifestations. It is right to admit that the optic mechanisms of both hemispheres are intimately connected with each other and that their function must be performed synchronously. For this reason, I think that pure alexia can take place when either of the hemispheres is injured. I agree with those who hold that we read not with one, but with both hemispheres. Consequently, a lesion of the optic tracts in either of the hemispheres may be followed by pure alexia. It is possible that the left hemisphere, being the more developed of the two, participates more in the act of reading than does the right hemisphere. It is also possible that for the reason of this difference of development alexia is not manifested equally by both hemispheres, when the cause is the same. A lesion in the optic tract in the right hemisphere may cause only a slight alexia or may even pass without causing any trouble.

The mechanism of the disturbance of reading in the second case is a special one. In this case there is a diminished duration of impressions combined with a shortened memory of letters. In this respect the case resembles that recorded by Grashey (12). His patient could read a whole word if he saw the entire word. He could not read it, however, when it was shown him in separate syllables. Grashey concludes, therefore, that there exists an aphasia which does not depend on loss of central function or on impairment of association tracts. It depends simply on a shortened duration of impression.

Some may say of my second patient that he did not suffer from alexia properly speaking; that his trouble was caused by amnesia. It is to be remembered, however, that he had great difficulty in reading. That such a difficulty is caused by lesions of the central optic tracts. Under these conditions the alexia is sub-cortical.

This case shows once more that pure alexia may present characteristics peculiar to itself.

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PROGRESSIVE GENERAL PARALYSIS ACCORD- ING TO THE STUDIES IN THE KHARKOFF ZEMSKOI HOSPITAL, DURING A PERIOD OF TWELVE YEARS (1890-1901).*

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This report was preceded by two others. In one of these the number of patients considered was three hundred and in the other the number was three hundred and forty patients. Both of these statistical studies were made during a period of twelve years (1885-1896), in the Simpheropol Bogouogodnich Zavedenii. Besides the statistical side of the question, the study deals with the etiology of general paralysis and its existence in women. The conclusions arrived at in these two studies are similar to those derived in the last study. I quote some of those conclusions below, as follows:

The number of cases of general paralysis is steadily and progressively increasing, particularly is this the case in women. The ratio of the number of men to that of women general paralytics, at least in the Tavrichcheskaja Department, is 10:5 and not lower than 10:4. The limit age at which general paralysis commences is not a fixed one, in general. Although this disease is known to be an affection prevalent in cities, it is beginning to extend into

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the country. In the city, general paralysis is becoming more and more a "democratic" affection; that is to say, it affects rather the middle and lower classes, and especially the women of these classes. The leading causes of the disease are mostly syphilis, alcoholism and heredity. Although the majority of these patients have syphilitic histories, it should not be concluded that syphilis is the exclusive cause of general paralysis. In many of these cases are found other causes alongside with the syphilitic infection. In other cases, alcoholism is a pre-eminent factor; this is especially the case in women. Syphilis, alcoholism and heredity are oftener co-operative causes of general paralysis than is either one of these elements a separate cause. The comparison of statistics relating to the virulence of the individual factors enumerated, when collected by various authors, should be made with the utmost care. The degree of virulence of any one of these co-operative diseases as a causative factor of general paralysis varies with the patient, his race and nationality.

The increasing proportion of women general paralytics is far greater than that of men. The causes of the disease in both sexes depend on general as well as on individual conditions; consequently, they are not always the same. According to my statistics, collected in the Tavricheskaja Department, during a period of twelve years, the ratio of men to women general paralytics is about 2:1.4. The social status of men differs materially from that of women afflicted with general paralysis; in men, the disease first showed itself in the higher walks of life and gradually extended into the middle and lower classes, while in women the reverse is the case. The lower classes of women were the first to suffer from the disease, then followed the middle and, finally, the higher class furnished subjects with this affection. It may be said that in men the disease was an "aristocratic" affection at first and gradually developed into a "democratic" disease, while in women it was a "democratic" affection at first and gradually developed into an "aristocratic" disease. The separate causes of the disease are the same in men and in women, but their combinations are different in both sexes. The clinical picture of general paralysis in women is distinctive from that in men and is characteristic of itself. The course of the disease is slower in women than it is in men, and, consequently, the duration of it is longer in women than it is in men.

My present contribution is similar in its character to the above cited ones and covers a period of investigation of twelve years (1890-1901), in the Zemskaia Bolniza of the Kharkoff Department. During this period, 8,191 patients were admitted, of whom 5,591

were men and 2,600 were women. Of this total number, 1,101 were readmissions (832 men and 269 women)). If this is deducted from the total above cited, the following figures result:

	Men.	Women.	Total.
Total number of patients admitted.....	4,759	2,331	7,090
General paralytics included in total.....	684	112	800
General paralytics expressed in per cent.....	14.37	4.97	11.28

In other words, there were 14 men and 5 women general paralytics to every 100 insane patients admitted. This proportion can also be expressed as follows: among the men patients there was 1 general paralytic to every 7 insane, while among the women there was 1 to every 20 insane subjects. These figures are similar to those obtained by I. D. Jdanoff and M. B. Ignatieff. Their statistics were obtained in the Russian psychiatric establishments. The figures expressing the percentage of general paralytics as given by the above mentioned authors are: 13.8 to 13.9 for men and 4.84 to 6 for women.

The proportion between the paralytics of both sexes were as follows:

Absolute proportions, 684 to 112, or almost six men general paralytics to one woman general paralytic, or 100 men to 16 women.

Relative proportion of men to women general paralytics, 14.37 to 4.97, or almost three men to one woman general paralytic, or 100 men to 33 women.

A comparison of the analogous data obtained in the Simpheropol and Kharkoff asylums shows the following:

	Proportion of the percentages of gen. par.			Proportion of sexes	
	Men.	Women.	Total.	Absolute.	Relative.
Simpheropol	15.15	8.76	13.26	4:1	1.73:1
Kharkoff	14.37	4.97	11.28	6:1	3 :1

While the data relating to the men general paralytics are quite similar in both hospitals, those relative to the women differ to a marked degree. Thus, as is shown above, there was one man general paralytic to six insane in the Simpheropol Hospital and one to seven in the Kharkoff Hospital. The proportions for women show that there was one woman general paralytic to eleven insane in the Simpheropol Hospital and one to twenty in the Kharkoff Hospital. Besides, in the Simpheropol Hospital there were admitted one hundred men general paralytics to every twenty-five women, while in the Kharkoff Hospital there were admitted one hundred men general paralytics to every sixteen general paralytic

women. The numbers of those who fell ill for the first time with general paralysis were one hundred men to fifty-eight women in the Simpheropol Hospital and only thirty-three women to one hundred men in the Kharkoff Hospital.

The table below shows the yearly progressive increase of general paralysis.

Date.	Number patients admitted.			General paralytics.			Proportions expressed in per cent.		
	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.
1890	289	138	427	53	6	59	18.3	4.3	13.8
1891	286	151	437	44	13	57	15.3	8.6	13.1
1892	289	169	458	26	4	30	8.9	2.3	6.5
1893	332	161	493	39	4	43	11.7	2.4	9.1
1894	329	147	476	52	2	54	15.8	1.3	13.3
1895	380	175	555	59	3	62	15.5	1.9	12.4
1896	444	195	639	59	3	62	13.2	1.5	9.5
1897	442	222	664	56	18	74	12.6	8.1	11.1
1898	449	220	669	62	17	79	13.8	7.7	11.8
1899	506	217	723	85	19	104	16.7	8.7	14.3
1900	483	263	746	78	14	92	16.1	5.3	12.6
1901	530	273	803	71	13	84	13.3	4.4	10.4
Total for 12 years....	4,759	2,331	7,090	684	116	800	14.37	4.97	11.28

The progressive annual increase of admissions of cases subject to general paralysis is particularly apparent when examined by periods of six years, as follows:

	Total number of admissions.			General paralysis.			Proportions expressed in per cent.		
	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.
1890-1895	1,905	941	2,846	273	32	305	14.3	3.3	10.7
1896-1901	2,854	1,390	4,244	411	84	495	14.4	6.0	11.6
Increase expressed in per cent....	149.8	147.7	149.1	150.5	262.5	162.3

From the above table it is evident that the increase of the number of admissions in general during the second period of time is 1.4 above the admissions during the first period, while the number of admissions of general paralytics during the second period is 1.6 more than is that during the first period. But, while the increased percentage of admissions of the insane in general was the same for men and for women (149.8 and 147.7), the increased

percentage of general paralytic was greater for women than it was for men. The percentage for men general paralytics was one and one-half times larger, while for women it was two and one-half times larger. Thus, the statistics furnished by the Kharkoff Hospital for Insane in regard to the marked increase of the number of general paralytics in women correspond to those furnished by other hospitals for insane.

In the consideration of the general paralytics that follows only the most salient features of conditions are touched upon.

AGE.—There were 49 patients below 30 years of age. Of these 35 were men and 14 were women. The youngest patient was 19 years of age, and 9 patients were between this age and 25 years (4 men and 5 women). The majority of the cases, 53 per cent., were between 30 and 50 years of age. Some cases were sixty or more years old. As a rule, not many years elapse between the commencement of the disease and the date of admission. It may be said, therefore, that this disease respects no age.

SOCIAL CONDITIONS.—The patients were considered under two conditions, as follows:

	Men.	Women	Total.	Proportions expressed in per cent.		
				Men.	Women.	Total.
Middle class	537	106	643	78.5	91.4	80
Higher class	147	10	157	22.7	9	19.7

The above figures show that the humble class furnished a relatively larger number of women paralytics (91 per cent. of women against 78.5 per cent. of men). In the higher class, on the contrary, the number of women was only half of the preceding one (9 per cent. of women against 22.7 per cent. of men). I have had occasion to point out the relative number of women paralytics furnished by the various social classes. Among the authors who have made mention of the same fact are Simon, Erlenmeyer, Martini, Luehr, Colovitch and others. In private sanitariums this interesting fact is particularly in evidence. Thus, during the period included between 1891 and 1901 there were admitted 365 insane men, who paid for their board, and 105 of these, or 28.7 per cent., were general paralytics. In the woman's wards 176 patients were admitted who paid for their board, but none of these had general paralysis. In the pay wards of the new hospital there were admitted, during the year 1900-1901 60 men and 50 women. Among the men there were 21 general paralytics, while among the women there was only one general paralytic. This patient was 21 years of age.

OCCUPATION.—All professions were represented among these patients. The day laborers furnished 20 per cent. of the cases, the peasants furnished 15 per cent., employes and small tradesmen 15 per cent.; the intellectual professions, 14 per cent.; mechanics, 12 per cent., etc. The majority of the cases came from the large cities, although some of these were peasants who had made the cities their places of residence. Some of these peasants, however, were toilers of the soil, but had come to the city for a short while.

CIVIL CONDITION.—There were 60 per cent. of married people, 15 per cent. unmarried, 5 per cent. widowed and the remaining 20 per cent. was unascertained.

EDUCATION.—The illiterate amounted to 25 per cent. and there were 25 per cent. of patients whose degree of instruction remained unascertained. Of the literate subjects there were 50 per cent. who could read and write, 5 per cent. with good education and 5 per cent. with higher education. This last percentage applies almost exclusively to the paying patients.

ETIOLOGY.—The statistical material that comes under this head was compiled by various physicians and at various times. Therefore, I limited somewhat the extent of the material for my use, considering only those cases which had positive histories. I found anatomical data in 540 cases (460 men and 80 women). The causes that I considered under conditions as indicated above I brought under five headings: syphilis, alcoholism, heredity, moral shock and traumatism.

The table that follows shows the percentage of these causes taken individually and combined with other causes.

	Individual causes expressed in per cent.	Combined causes expressed in per cent.
Syphilis	31.5	55.3
Alcoholism	14.3	43.2
Heredity	14.7	16.7
Moral shock	5.0	10.0
Traumatism	3.9

The following table shows the percentages of the various causes as they were found in the Simpheropol and Kharkoff hospitals for the insane.

	Syphilis.	Alcoholism.	Heredity.	Moral shock.	Traumatism.
Simpheropol	41.0	43.6	23.0	12.8	10.2
Kharkoff	55.3	43.2	16.7	10.0	3.9

Thus, of the five causes here considered alcoholism furnished about the same number of cases of general paralysis in both the Simpheropol and the Kharkoff hospitals for the insane. Moral shock was the cause of the disease in quite an equal degree in both hospitals. Syphilis, however, was responsible for the disease in more cases in the Kharkoff Hospital than it was in the Simpheropol Hospital. As is shown above, syphilis and alcoholism are the leading causes of general paralysis. The number of cases in which alcoholism is the cause being quite equal in both hospitals, the question of syphilis as a cause in an unequal proportion in the two hospitals becomes an important one. Besides, it is interesting to note that although syphilis is more prevalent in Kharkoff, the number of general parylitics is less here than it is in Simpheropol.

The following table shows the percentage of causes of general paralysis in men and in women:

	Percentage.	
	Men.	Women.
Syphilis	56.5	50.0
Alcoholism	37.6	36.2
Heredity	13.1	23.7
Moral shock	7.3	2.5
Traumatism	3.5	2.5

This table shows that syphilis is somewhat more prevalent as a cause in men than it is in women and that alcoholism is only slightly more frequent as a cause in men than it is in women; but heredity and moral shock are far more frequent causes of general paralysis in women than in men.

The following table shows the percentage of the various causes in the two sexes separately as found in the two hospitals:

	Syphilis.		Alcoholism.		Heredity.		Moral shock.		Traumatism.	
	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.
Simpheropol	67.0	41.0	36.4	43.6	20.0	23.0	9.1	12.8	4.1	10.2
Kharkoff	56.5	50.0	37.6	36.2	13.1	23.7	7.3	16.2	3.5	2.5

From a comparative standpoint the above table shows that in the Kharkoff and Simpheropol hospitals the individual causes give the following quantities of cases of general paralysis:

Syphilis, less in men and more in women.

Alcoholism, almost equal in men, less in women

Heredity, less in men, almost equal in women.

Moral shock, less in men, almost equal in women.

Traumatism, little in men, still less in women.

In other words, barring alcoholism, that gives an equal proportion of cases in both hospitals, all other causes in men are of less proportion in the Kharkoff than they are in the Simpheropol Hospital. In women, with the exception of heredity, syphilis and moral shock furnish more cases in Kharkoff, while alcoholism and traumatism furnish less cases in the same city. The most instructive conclusion of these results is that relating to syphilis. Indeed, in Kharkoff the percentage of syphilis in men is much less than is that in Simpheropol, the difference being 11 per cent. Nevertheless, the relative proportion of general paralytics is the same in both hospitals, the difference amounting to 1 per cent. In women, on the contrary, syphilis is a more frequent cause in Kharkoff, exceeding that in Simpheropol by 9 per cent., and yet the number of cases is almost twice less here.

The question arises how is one to explain the lesser number of women general paralytics in Kharkoff as compared with that in Simpheropol?

I have had occasion to mention above that the causation of general paralysis is quite complex and that the disease is due to an intricate combination of causes; these may be individual and collective, local and general of most varied natures. Syphilis, although an important factor in the causation of the disease, is only one of many other factors, the importance of which may be predominating as exciting agents. Thus, the cause termed the "struggle for existence" is a many-sided one and occupies a most important place in the etiology of the disease. I pointed out elsewhere that city life was responsible for a large number of cases of general paralysis in women in the Tavrichiskaja Department. The crowding in the houses, the prevalence of commercial centers and the numerous conditions accompanying this life are so many elements favorable to the development of the disease. In the Kharkoff Department, on the contrary, the city life is rather elementary in its development. Kharkoff itself and Sum are about the only two centers in this department where city conditions of life are to be found.

I shall not enter into any clinical consideration of the disease, as this subject will be treated of separately. I only wish to remark that the classic features of general paralysis are becoming more and more replaced by demential manifestations in the Kharkoff Hospital. This substitution has been observed in many other hospitals.

The above cited facts lead to the following conclusions:

1. During the second period (1896-1901) the increase of the number of insane admitted was less than one and one-half times,

as compared with the number during the first period (1890-1895), while the number of admissions of general paralytic was more than one and one-half.

2. Of all the insane admitted during the stated period there were more than twice as many men as there were women, whereas the men general paralytics were six times more numerous than were the women.

3. The increase of the admissions of the men insane and general paralytics during the second period was slight as compared with the number of admissions during the first period, whereas the admissions of women insane for the same period was one and one-half times more marked and the admissions of women general paralytics was two and one-half times more marked.

4. There was 1 general paralytic to every 7 insane men, while there was 1 general paralytic woman to every 20 insane women.

5. Every 100 admissions of men general paralytics corresponded to 16 admissions of women general paralytics, while to every 100 cases of first admissions of men general paralytics corresponded 33 cases of women general paralytics of the same kind.

6. In the ordinary walks of life the relative number of women general paralytics was larger than that of men general paralytics, while in the higher walks of life the number of women general paralytics was twice less than that of men general paralytics.

7. The most important causes of general paralysis was syphilis, alcoholism and heredity in various combinations.

8. In Kharkoff the number of general paralytics is less than in Simpheropol; this is especially applicable to the women.

9. In view of the fact that general paralysis is an unusually complex disease and is caused by complex causes it is most desirable to adopt a uniform plan for statistical data relating to the genesis of this disease.

ON THE FORM AND THE DEVELOPMENT OF THE PROTOPLASMIC PROLONGATIONS OF THE SPINAL CELLS OF THE HIGHER VERTEBRATE.*

By DR. T. GEIER, *University of Moscow.*

Soukhanoff and Czarniecki (1) were the first to publish an accurate account of the study of the protoplasmic prolongations of the spinal cells. I undertook this present work with a view to verifying the results obtained by them and my conclusions are similar to theirs. I made the first studies on adult vertebrate subjects. I made a further study of this question on new-born kittens, and found some interesting results. In the new-born kitten the protoplasmic prolongations of the nerve-cells of the spinal cord were somewhat different from those in the adult animals. I further made a study of the same prolongations in animals born in a state of inanitation. This study is quite new, as, besides the authors mentioned, there are only two more authors who have made some mention of the early period of dendritic development. I experimented on four young rabbits and eight kittens. Two rabbits were killed by decapitation. The pieces of their spinal cords were put for two days in a mixture of bichromate of potash and osmic acid and then for two days in a solution of nitrate of silver (1 per 100). The third rabbit was two weeks old and was killed by chloroform (the duration of the chloroforming was six minutes). The specimens were treated as above. The fourth rabbit was one month old and was killed by chloroforming, as above. Two kittens were newly born and were killed, one by chloroforming, in five minutes, and the other by decapitation. The specimens were

**Neuraxe*, Vol. IV., fasc. 3.

treated as above. Two kittens were three days old. One was killed by chloroforming and the other by decapitation. One kitten, seven days old, was killed by chloroforming; one kitten was one month old and was killed by chloroforming; two kittens were two months old.

The results obtained from these experiments are as follows:

The dendrites of the nerve cells of the anterior horns are smooth in contour. This is not the case with the dendrites of the nerve cells of the posterior horns. These have an irregular and knotty contour. The dendrites of the nerves of the anterior horns extend in a straight line, while those of the cells in the posterior horns often turn in their direction either to the right or to the left, thus assuming an irregular and even a sinuous direction. The dendrites of the cells of the anterior horn divide, in their ulterior ramifications, by means of division; the dendrites of the cells of the posterior horns, on the contrary, divide by means of ramification. The dendrites of the cells of the anterior horns have, if at all, insignificant collateral appendices, while those of the posterior horns have numerous collateral appendices; at times these are even quite complex.

It is well to remark that the description here given of the protoplasmic prolongations of the nerve cells is rather schematic. Indeed, the contour of the dendrites in the anterior horns is not always regular. The perfectly regular contour seems to characterize one group of cells, while the somewhat irregular contour is characteristic of another group of cells in the same horn. The dendrites of the regular contour and smooth appearance, with a small number of collateral appendices, seem to belong to motor cells; the dendrites of irregular contour, on the contrary, seem to belong to groups of cells of another function; they belong, perhaps, to the commissural cells or to those of the columns. A similar remark may be made about the dendrites of the posterior horns. They are all irregular and are all characterized by collateral appendices. In the substance of the Rolando the dendrites are particularly irregular, are usually of a moniliform appearance and have a larger number of collateral appendices than the star and triangular shaped cells themselves of the posterior horns.

I found also that some of the cells of the posterior horns had numerous collateral appendices analogous to those seen with the dendritic prolongations. I also found some cells in the posterior horns the protoplasmic prolongation of which were knotty and almost completely free from collateral appendices.

Besides the facts I published, in an anterior article, relating to the study of the dendrites, the present study shows me that the

dendrites of the new-born animals differ somewhat from those of the adult animal. The dendrites of the new-born animals undergo gradual changing as they advance in age. These changes take place both in the anterior and in the posterior horns.

ANTERIOR HORNS.—All the protoplasmic prolongations of the nervous cells of the anterior horn are less regular and less straight in the new-born than in the adult animal. The regularity of contour and the linear elongation of the dendrites increases with the age of the animal. In the new-born the regularity of the dendrites is more marked near the cellular ends. As the animal advances in age this irregularity of contour and direction extends farther up, nearer the distal end of the dendrite; finally, at mature age, the irregularities are concentrated in the terminal ramifications only. This evolution is proper to all the dendrite of the nervous cell of the anterior horn. From another standpoint, however, the dendrites of the nervous cells of the anterior horn may be divided into two groups. The first group is composed of dendrites of a smooth contour and devoid of thready and thorny formations along their course; the second group comprises dendrites of irregular contour and rich in thready formations and thorny growth along their course. The dendrites of the first group, although more regular than those of the second group, attain their perfect differential form at adult age. Very frequently, however, the prolongations of the first group present varicosities. The prolongations of this group seem to belong to the motor cells of the anterior horn. It is difficult to say what the cause is of the difference in the structure of the prolongations in the two groups. It is possible that the dendrites of the first are destined for a special function; or, perhaps they go through the same stages of evolution as those of the second group, only the evolution takes place during intra-uterine life, coming into the world in perfect condition for the special function they are to perform.

The protoplasmic prolongations of the second group present marked differences when taken at different ages of the animal. In the new-born the prolongations have numerous swellings and strangulations as well as thready and thorny formations. A change of marked degree of these formations can be observed after the first day of life. They become twice and three times their size. Gradually, this irregularity of contour begins to wear off near the proximal end of the dendrite and extends towards its terminal end. In the places where the dendrites become smooth the thready formations become more conspicuous. So that the dendrite may be described as follows: It is smooth near its prox-

imal end, becomes less and less so as it is removed from this end and also becomes more and more garnished with the thready and thorny formations as it nears its distal end. Finally, the dendrite becomes almost smooth in the fully developed animal. It is probable that the growth of the dendrite absorbs the formations described above, or else they serve to form new ramifications. This latter supposition is supported by facts observed on dendrites of new-born animal. Thus, these formations are two or three times larger on the third day of life than they are on the first. At the third day of life some of these formations disappear and the smooth dendrites become garnished, instead, with new ramifications.

The protoplasmic prolongations of the second group belong, apparently, to cells situated somewhat more dorsad than the motor cells; probably they belong to the commissural and column cells. These dendrites correspond to those of more adult animals. These dendrites are of a more irregular form, presenting now swellings and now strangulations. The appendices of these dendrites are more numerous than are those of the first group.

POSTERIOR HORN.—In the new-born animal the protoplasmic prolongations of the nerve cells of the posterior horn differ from those of the adult animal. It is difficult to say whether there exists any difference in the irregularity of the dendrites of the new-born and adult animals. The great difference is particularly marked in the richness of the new formations along the dendrites in the new-born. These formations are similar to those described in the dendrites of the anterior horns. These formations seem to be growing ramifications of the dendrite. Some of these formations attain considerable dimensions, while others seem to disappear after the completion of the growth of the dendrite. Another fact is that in the adult animal the dendrites of these collateral appendices are far less numerous and their form is less changeable. Finally, there is a group of cells in the posterior horn, which were termed by Ramon y Cajal "cellules limitantes." They are situated between the substance of Rolando and the posterior column, forming a series of disconnected nervous elements. Ramon y Cajal says that the dendrites of these cells form the anterior limit of the posterior column and that they ramify there. In my sections of the spinal cord I found these cells voluminous in size, of triangular form, stellate or fusiform. Their protoplasmic prolongations were of considerable size, of rather regular contour and the appendices were quite marked in quantity. The bodies of these cells had appendices analogous to those found on the protoplasmic cells.

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MORAL CRUTCHES.

To those who have both the inclination and the courage to look facts straight in the face, the history of human events is not only instructive but it is oftentimes humorous in its pure pathos. The humor of reaction and oppression, however, is never an enjoyable quantity during the term of its actual force. Specious pleading too often succeeds even while it destroys, and there is no weapon of defense more popular for use by the retrogressionist, the reactionary, or the supporter of an evil system, than the more or less exact or more or less perverted dictum of some great man who has been a long time dead. In these enlightened days, when conditions do not make the man, but man, to a large extent, makes conditions, it is most pathetic to see a colleague in deadly fear of doing something different from that which he was taught to do, "when he was young, in the good old days of yore."

We refer herein, with particular regret, to an article appearing in the *American Journal of Insanity*, in its January number, 1903, opposing the movement now being so heartily supported by leading psychiatrists throughout the world, and by the JOURNAL OF MENTAL PATHOLOGY in particular, to relieve our superintendents of hospitals for the insane from the duties which have

little or no bearing on the science of psychiatry. Our contemporary treats of this subject under the heading of "Dual Management of Hospitals," and makes therein long quotations from old writings, in support of the argument that a dual management of our hospitals for the insane would be a perilous practice, because, if you please, some physicians, many years ago, said that single-headed management of these hospitals, as they then existed, when sanitation was as yet an almost undiscovered science, would be advantageous. Our contemporary says, in part:—

"It was natural, after all, that persons unfamiliar with the history of psychiatry in this country should have reasoned that, under the new dispensation that is coming, the medical superintendent of a hospital for the insane should be shorn of some of his executive functions, using the specious plea that his whole energies should be devoted to the strictly scientific aspects of his work, but forgetting that that much-abused word 'scientific' has a wider range of meaning than the bedside and the laboratory prescribe. So here and there history is repeating itself in the suggestion that dual management is a corollary of the psychopathic hospital."

We presume that when deprecating the suggestions of "persons unfamiliar with the history of psychiatry in this country," the author of this particular ebullition desired to convey the idea that he himself was at least moderately familiar with the history in question, and with the advantages that have accrued to our insane, and incidentally to our science, from that single-headed management which he so energetically advocates. Alas, the proof of his familiarity with this history seems to be reared upon a pedestal of quotations, all of ancient date. One of these quotations is dated May 26th, 1841, and the other October, 1865. The authority quoted in connection with these dates is Dr. James MacDonald, who was interested in the organization of the New York State Lunatic Asylum. Now, we are, of course, interested in the views of all our predecessors, and it is our duty to read what they have said and to know what they have thought; but this is not sufficient;—we should also take time to carefully and personally examine the results of their thoughts and their ideas and their actions. We are disappointed, therefore, when we come to the end of the article in question and find no mention of any analysis of the results of the single-headed management.

Those of us who are engaged in the pursuit or practice of the science of psychiatry and who are not bound by any ties of political affiliation, who are not influenced by the reciprocal sentiments of clannish cliques, and who are not dependent on the favor of the powers-that-be, and who can, therefore, be honest with ourselves

and with the world at large, know too well the horrible sores that lie concealed behind the magniloquent platitudes of the perennial non-vertebrate pleaders for the unholy cause of seclusion, exclusion, and accumulation. The question naturally suggests itself as to whether the writer of the article we allude to is at all "familiar with the history of psychiatry in this country," and whether he is single-minded when he accuses some "persons" of not being familiar with that history? As the names of the "persons" in question are graciously omitted, we are put to a disadvantage, because we are unable to carefully examine the records of these persons and to give them at length in these columns. For the benefit of those, however, who have gathered, or may hereafter gather, courage sufficient to look down-right facts straight in the face, we would make reference to the address delivered by Dr. Louise G. Robinovitch, entitled, "The Study of Psychiatry of To-day:—Of What Should it Consist?" read at the 58th Annual Meeting of the American Medico-Psychological Association, held at Montreal, Canada. The address was published in No. 1, Volume III. of the *JOURNAL OF MENTAL PATHOLOGY*. Special value attaches to this paper because the author is particularly familiar with the subjects she handles, as she was resident physician not only in the leading general and special hospitals in Philadelphia, but also spent three years in one of our largest New York hospitals for the insane, where she was a Senior Physician. The friends of our science who can stand on their own feet, will find in this paper some instructive facts bearing upon the reasons for the extreme poverty of the psychiatric science in what is regarded as one of our most populated and most noted hospitals for the insane. The following lines, quoted from the above paper, and written by a superintendent of a "single-headed" institution, are most eloquent in themselves, particularly so because they are not antiquated, but bear date of 1902, and have hardly reached their first anniversary. They were written in reply to an application for permission to study psychiatry and to utilize the vast material in that hospital.

"I do not see my way to meeting your wishes in the matter of having free access to patients and clinical histories in this hospital. Similar application is made from time to time by so many applicants, that the granting of all—as must necessarily follow the granting of one of the requests—would, in my judgment, seriously interfere with the regular administration of the hospital. You will understand that this is a general opinion, which has been held and applied for years, and has no personal bearing whatever."

What force can comment add to this?

In his argument against dual management, the author of the article in our contemporary quotes Esquirol, Pinel, Falret and

others of classical fame, and construes their words to mean that the physician should act the dual rôle of housekeeper and psychiatrist. As aptly might the signed confession of Galileo be used against him to prove that he really believed that the sun moved around the earth.

Think clearly and independently but a moment! Is the dictum of fifty or of a hundred years ago a fit standard for authority at this day? Is a method advocated by a revolutionary of half a century ago at all apt to be the method he himself would advocate were he now alive? Consider the abuse, the scorn, the execration and the vituperation to which our free-minded, open-hearted and unfettered masters of a few decades ago were subject at the hands of the weak-kneed, the weak-backed, the sycophants, the administrationists, the toadies, the affiliates of the powers-that-were, the office-holders, the profit-sharers of gains wrung from the bodies and the backs of the unfortunates of those days, and consider whether it is graceful to stand forth before the awakened intellect of this generation and plead for the continuation of that which is bad, of that which is secret, of that which is unscientific, of that which is oppressive, and of that which hides itself under the cloak of authority, of pompous dignity, of official immunity, of social exclusion and of profit-sharing collusion and combination? Those of us, however, who are "familiar" with the histories of the lives of Esquirol, Pinel and Falret, are also familiar with the fact that the entire energies of these men were devoted to and spent "at the bedside and in the laboratory." The monumental works of these men are quite sufficient evidence of the fact that the word "scientific" *cannot* have a wider range of meaning than the "bedside and the laboratory." Were any further proof of this truth necessary, we would refer our retroactive propagandist to the stories told by the pupils and friends of these scientists. He will learn once and for all time that Falret deemed the "bedside and laboratory" the main ends of his life. He will learn that the most perfect housing and caring for the insane, the world over, is to be found in the wards of those distinguished psychiatrists who devote all their time to scientific and clinical work.

It seems almost absurd to have to adduce arguments to prove that the word of a scientist should **have** greater weight than the word of a superintendent-housekeeper. It seems pitiful that argument should have to be brought forward to prove that the "much abused word 'scientific'" has its widest range of meaning at the "bedside and laboratory," rather than at the business desk and the telephone receiver.

Let those who wilfully, or otherwise, have hidden their heads,

ostrich-like, in the sands of that desert of false "conservatism," which is really nothing but the arid plain of reactionism and selfishness, give heed to the opinions of our leading men of to-day as regards the superintendent-housekeeper. In a veritable Babel of tongues they may be heard expressing most vigorous disapproval of single-headed management. One of these scientists, when asked his opinion on this matter, crystallized it in the following reply:—

"Quoi? M'occuper des pommes de terre et des oignons? Et mon travail, que deviendrait il?"

Having in mind the voluminous quotations which formed the basis of the article to which we have referred herein, we use the caption:—"Moral Crutches." As the enormity of the constant crime against civilization being practiced by seclusionists and exclusionists dawns upon us with its full force, and as we see, in the prospective, the view that posterity will take of the sleek and plausible aggregation that enforces this system and blinds the world to the heinousness of its offences,—as all similar aggregations have done in all professions, and in all causes, since the beginning of the history of the universe, before the day of reckoning has arrived in every case for every particular aggregation,—we feel inclined to strike out the word "moral" and to substitute for it a word more effective but less pleasing.

Our young physician cannot be condemned in perpetuity to a condition of mental torpor by the supporters of an antiquated and vicious establishment. Our country, so noted for its progress in all other lines, so famous for its enlightened spirit, will shake off the thralldom of its slumber in this direction and will surely take its place as one of the leaders in the scientific progress of the world at large. This will happen so soon as its attention is seriously attracted to the iniquities of the present system, and we sincerely trust that those of our contemporaries which are not tied down by bonds of either affiliation or combination will lift up their voices and insist on being heard in spite of our official reactionaries.

THE ADVANCE IN THE UNDERSTANDING OF PSYCHIATRY BY THE GENERAL MEDICAL PROFESSION.

It is gratifying to notice that the efforts of the alienists, within the last fifteen years, to impress the importance of the knowledge of psychiatry on the general profession is being crowned with success. Evidences of this are seen not only in the general medical press, which now treats currently of questions of psychiatric import, but also in a general movement towards connecting psychiatric wards with general hospitals. The aim of this general movement is not only to facilitate early treatment of in-

cient insanity, but also to disabuse the mind of the community of the wrong notion that some mystic condition characterizes those afflicted with psychic disorders. Thus, in Copenhagen and in the hospitals of Australia the reception ward system for the insane in the general hospitals has proven to be satisfactory, according to reports in our leading psychiatric publications. Guided by these satisfactory results, Dr. Clouston is making an effort to establish reception wards for the insane in Edinburgh, Scotland. Judging from the latest accounts of this question, there is every reason to believe that his efforts in this direction will be crowned with success.

Let us honor the spirit of Philadelphia in this direction and give deserved credit to the Philadelphia City Hospital (Blockley) for having long since anticipated and practiced the principle here advocated: For many years this hospital has had a reception ward for the insane, alcoholic and other psychiatric subjects. This ward is connected with the general hospital wards, and every resident physician is compelled to spend part of his service in this special ward. A "Blockley" resident physician is, therefore, well prepared to enter on his duties as a family physician, if he has improved all the opportunities offered in that hospital.

It would be desirable if other hospitals were to follow the example of "Blockley" and it is to be hoped that the reception ward for psychiatric cases at Bellevue Hospital will not be abolished, as it is now planned to do.

The movement on foot to detach completely the reception ward for the insane from Bellevue Hospital is a regrettable one.

We publish in this issue a few quotations from the writings of eminent members of the medical profession, expressing their views on the causes of the retarded progress in the science of psychiatry in the hospitals for the insane.

Our contemporaries possessing either the courage to face the truth or the desire to have it forced on their understandings, will find ample food for reflexion in the substance of these quotations.

THE NEW YORK STATE COMMISSION IN LUNACY AND ITS CENTRALIZATION BILL.—Governor Odell vetoed the Ramsperger bill.

In his veto message the Governor states the ground for the veto as follows:

"This bill, with some of whose features I am in accord, provides for such a radical departure from existing laws governing the institutions under the control of the Commission in Lunacy, that

I have been led to disapprove it. It seeks, in the first place, to create two new and separate departments, with the additional expenses necessary for their maintenance, a proposal which does not seem to be warranted by the necessities of the service. It provides for a treasurer for all of the hospitals, which in itself would be desirable were it not for the fact that the bill proposes to place under his control all the estimates of expenses, and authorizes him to make drafts on the Comptroller by quarterly estimates, instead of by monthly estimates, as heretofore. This might possibly lead to large and unnecessary drafts on the Comptroller.

"This objection could perhaps be overcome, but a more serious feature of the bill is that which proposes to take away from the stewards of the various institutions the purchasing power, and lodge it in an official to be appointed by the Commission. This would be conferring on this department power not possessed by any other department of the State government. The proposal in the bill is a departure that I do not care to sanction, as it might lead to abuse and scandals which are almost impossible under the present system of conducting the affairs of these institutions."

LUNACY BILL PASSED. Chapter 221, Assemblyman Conkling's bill, authorizing the State Commission in Lunacy to appoint a medical inspector at a salary of \$3,500 per year.

PUBLISHER'S NOTE.

On account of delay previously explained, numbers 1, 2 and 3, of Volume IV have been consolidated in this issue.

RICHARD VON KRAFFT-EBING. The death of Krafft-Ebing is being felt throughout the psychiatric world and honor is being rendered to his memory by various medical associations. Although he was in poor health for some years past and his death did not come as a surprise, the loss of so great a psychiatrist as he was has been a great shock to his friends and followers. He was for years a sufferer from renal calculi. In 1900, an attack of this disease prevented him from attending the International Medical Congress, held in Paris. Regardless of the suffering this disease caused him at various intervals, he was an incessant worker and even during the last year of his life he kept steadily at his work, publishing a monograph on the menstrual psychoses. His was a fruitful life as a clinician, lecturer, teacher and writer in the domain of psychiatry. His most important works are: "*Lehrbuch der Psychiatrie*," "*Lehrbuch der Gerichtlichen Psychopathologie*" and "*Psychopathia sexualis*."

QUOTATIONS. ABSTRACTS FROM *Mental Functions of the Brain*, by Dr. Hollander.

DR. S. WEIR MITCHELL, in his address read at the 50th annual meeting of the American Medico-Psychological Association, held in Philadelphia, May 16, 1894.—“We have done with whip and chains and ill-usage, and having won this noble battle, have we not rested too easily content with having made the condition of the insane more comfortable?”

“Frankly speaking, we (Neurologists) do not believe that you (Alienists) are so working these hospitals as to keep treatment or scientific product on the front line of medical advance. . . . Where, we ask, are your annual reports of scientific study, of the psychology and pathology of your patients? They should be published apart. We commonly get as your contributions to science, odd little statements, reports of a case or two, a few useless pages of isolated post-mortem records, and these are sandwiched among incomprehensible statistics and farm balance-sheets. . . .

“I am quite willing to admit that for the careful treatment of the possibly curable insane, none of you have enough help. . . . I can but partially admit this endless plea of overwork in extenuation of the charge of scientific unproductiveness, that serious symptom of a larger malady. . . . Want of competent original work is to my mind the worst symptom of torpor the asylums now present. Contrast the work you have done in the last three decades with what the little group of our own neurologists has done. You have immense opportunities, and seriously, we ask you experts, what have you taught us of these 91,000 insane whom you treat?”

“A feeling of distrust concerning the therapeutics of asylums is fast gaining ground in the mind of the general public. The medical superintendents are farmers, stewards, caterers, treasurers, business managers, and physicians. . . . It is a grave injustice to insist that you shall conduct a huge boarding-house—what has been called *a monastery of the mad*—and keep yourselves honestly able to move with the growth of medicine, and to study your cases, or add anything of value to our store of knowledge.

“My fear is that some of you would not change your organization if you could. Nor does it surprise me that so many are contented and ask no radical alterations. I think I should in time become but formally dutiful if I lived all my days in any kind of hospital. When I go into my clinic or wards, I take with me the fresh air of the outer world, and this is what you want. You ought not to live and sleep in your hospitals at all; you ought to be in contact with the world of sane men, having consultations outside, seeing us and our societies.”

DR. J. L. BILLINGS.—“The asylums have contributed very little to advancement in knowledge as to the causes, pathology and best treatment of the various forms of insanity in view of the opportunities which their officers have had.... I have also observed the fact, which must be familiar to all who regard the progress of pathology and therapeutics of mental diseases, that while the opportunities in this country for the study of these diseases are so vast, the contributions to the science of psychiatry are meagre, when compared to those of the continent of Europe.”

DR. WILLIAM H. DRAPER.—“Our asylums are still conducted and administered on the old idea that their main object is to provide safe and secure retreat for lunatics, and they are not organized in accordance with the demands of modern pathology, as hospitals for the scientific investigation and treatment of the functional and structural diseases of the brain.”

DR. A. JACOBI.—“The actual fact is that our asylums have always been more or less gentle and genteel prisons for the mentally sick, rather than hospitals.... Recoveries are plentiful in our statistics. From them and from my own experience I know that the same person recovered four or six times from what was styled ‘acute mania.’”

DR. B. SACHS.—“Insane asylums are homes for the insane, not hospitals for the treatment of mental diseases. No serious attempt at proper treatment is made.”

DR. CRICHTON-BROWNE, in his paper read at the British Medical Association, Cambridge, August, 1880.—“Any one accustomed to the literature of general medicine, and turning to that of psychological medicine for the first time, must, I think, be struck by the comparative paucity of reports of cases in the latter, or at least of reports of cases intended to illustrate diagnosis, or the grouping of symptoms in mental diseases. True, in our special journals, cases of insanity may, from time to time, be found described; but these are almost invariably published because they illustrate the success or futility of some kind of treatment, or the morbid anatomy of some coarse lesion in the nerve centres, and not because they are typical of any variety of psychical derangement.

“The record of cases indeed, which are issued from lunatic asylums, whatever be the motive of their publication, are singularly deficient in information bearing on the modifications of the higher cerebral functions. If we enquire the reason of this paucity of clinical reports of cases of insanity, we shall, I believe, find that it

is to be attributed to several causes. In the first place, asylum medical officers have been called on hitherto to give so large a proportion of their time and energy to administrative, sanitary and routine duties, that they have had little left to expend on minute and tedious observations at the bedside or in the wards. . . . Thus it has come about that, the case-books of most asylums have been kept for official rather than scientific purposes, and do not afford the information that is necessary for the preparation of clinical reports.

"In the second place, the medical men who enter asylum practice are ordinarily unprepared by previous training to sift and classify the special phenomena that then fall under their notice, even if they had the leisure and disposition to do so. Unacquainted with the physiology of mind, they are bewildered by its morbid manifestations, and lack that knowledge of terms and that habit of thought that are essential to an accurate analysis of psychical derangements.

"In the third place, the observation of aberrations of mind is exceedingly difficult and laborious, even to those who are qualified for the task, and hence few have had the intrepidity to undertake it.

"Of course, there are in some asylums at this time, very able scientific medical men, and there is a little scientific work going on, but a large proportion of inmates do not get medical treatment at all; it is not attempted.

"Some ladies with a family of three or four, and a staff of an equal number of servants, find the daily domestic arrangements of their household too much for them. Let them read carefully the duties of the medical superintendent, as explained by Sir Henry C. Burdett in *Hospitals and Asylums of the World*, London, 1891."

In the report referred to above is given a detailed description of the clerical and housekeeping duties of the superintendents in hospitals for the insane, tending to show that no time is left, under these conditions, for scientific work. The conclusion in this description is concrete, reading thus: The "medical staff should be ample, and their duties should be entirely restricted to the observation and treatment of new cases. Insanity must be studied by the various lights of medical science systematically and steadily. Until it forms an integral part of medicine, we cannot look for an increased need of relief to the individual or to the public."

DR. FERRIER.—His opinions are concluded by saying that we require not only laboratories for post-mortem investigations, but

also greater facilities for clinical study, such as is provided for in several of the large centres of the continent.

THE COST OF CRIME IN NEW YORK.—The 3,500,000 people in New York support an army of nearly 35,000 criminals.

Then they spend \$35,000,000 a year trying to avoid supporting these criminals.

In other words, crime costs each New Yorker an average of \$10 a year.

The amounts spent for the education of children, the cleaning and clearing of streets and the maintenance of Fire Department, libraries, parks, health offices and baths are together much less than the amount for protection against crime.

The Police Department costs the city more than \$11,000,000 a year. About 7,000 men are employed in this department, nearly 100,000 arrests are made each year, almost 10,000 criminals are maintained in prisons, and, with all that, \$5,000,000 in cash or goods is stolen annually and \$2,000,000 worth of property is destroyed by incendiary fires.

Besides the expense for protection, enumerated there are 2,000 watchmen and hundreds of private detectives employed, a million dollars is spent for anti-crime societies, four millions for safes, three millions for lawyers' fees, a million for locks and several more millions for other forms of protection.

And with all this the enterprising burglar still goes a-burgling undismayed and the 3,500,000 people of the city are kept in constant fear of him and the rest of his brothers engaged in extracting their living from the purses of the unwilling majority (*The World*, April, 1903).

SERUMTHERAPY IN EPILEPSY.—PROF. L. RONCORONI: The experiments with the blood and urine of the epileptics made by some clinicians lead them to believe that epilepsy is due to auto-intoxication. The author demonstrated in a previously published article that these positive views regarding the auto-toxic nature of epilepsy are not sufficiently proven. He has proven that the injections of epileptic urine into the veins rapidly caused death; but these injections brought about such an elevation of vascular pressure that this pressure alone was sufficient to kill the animal. Thus, the assertion regarding the toxicity of the urine drawn from epileptics was rather subject to doubt. If epilepsy is due to auto-intoxication, the latter is only one of many other factors which enter into play as etiological agents. The causes of

epilepsy are multiplex: toxic, reflex, traumatic, etc. Besides this should also be considered the various predisposing causes and above all, the underlying anatomic-pathology. It does not seem reasonable, therefore, to assert that the disease is due to one simple cause,—auto-intoxication.

According to Ceni, the serum of the blood of epileptics contains soluble epileptogenic principles. He therefore tried to find out whether small injections of this serum could not bring about an amelioration in the epileptics. He drew the blood from one epileptic subject and injected the serum of this blood into another epileptic subject. These injections of small doses of the serum did not realize his anticipations. On the contrary, they caused, in some instances, true acute infection. He then tried to find out the effect of progressive doses of this serum. According to Ceni, the results were encouraging when progressive doses were injected. He finally concluded that great improvement and even cures could be obtained for epileptics by means of this treatment.

The author of this article made a series of experiments according to Ceni's indications, with a view to utilizing the therapeutic virtue of the serum in question. Experiments were made on epileptic, as well as on non-epileptic, subjects for a period of four months (from December, 1901, to March, 1902). Careful observations were made of the cases, regarding their diet, body-weight, number of attacks, etc., and the following are the author's conclusions regarding the matter:

The serum of epileptic subjects had no therapeutic effect in his cases of epilepsy. When injected into non-epileptic subjects, the serum obtained from epileptics did not produce in the non-epileptic any substance that was apt to modify epileptic attacks, or to cure them (*Archivio di Psichiatria, Sc. Penali ed Anthropol. Criminale*, Vol. XXIII, Fasc. IV-V).

POTENTIAL CRIMINALITY AND HOMICIDAL OBSESSIONS.—DR. C. E. MARIANI: A study is made of the relation between the psychiatric manifestations and the anthropological traits of the same individual. The patient presents typical physical stigmata of a criminal, as indicated by Lombroso and Ferri. She has a jaw of enormous size, a glassy look, a sallow complexion, thin lips and a receding forehead. Besides, she was subject to marked metrorrhagia after she had had a severe fright. This trouble lasted about one year. This hemorrhage was at times accompanied by bleeding from the nose. Profound anemia was the result of these losses of blood. She then underwent some

severe moral strain and disappointment in love. She became depressed mentally and frequently suffered from attacks of migraine. One day she met an acquaintance who had spoken unkindly of her and she came home in an emotional condition. She had an attack of furious anger and said to her uncle that she felt as if she were about to become insane. She remained excited during the entire day and did not sleep through the night.

A few days later, while talking to one of her friends, she felt an irresistible impulse to kill him. This homicidal obsession was followed by others. One day, while passing near a lake, and holding a child in her arms, she had an irresistible impulse to throw the child into the water. She then became subject to these obsessions, which took on various forms. She felt impelled to bite the flesh of those with whom she talked, to plunge a cutlass into the heart of any one who came near her, etc. The sight of sharp instruments invariably excited her homicidal impulses. She says that the only thing that kept her from committing crimes was her religious morality.

The heredity of this patient is bad, as there are insane and debilitated subjects in her family.

Besides these obsessions, the patient also suffered from hemiparesis on the right side, nausea, gastric pains and occasional attacks of somnolence. She also suffered from suicidal depression on account of her having homicidal impulses.

Concluding his article, the author says that the profound anemia probably caused a relaxation of her inhibitory power. There are many traits in this case showing the relationship between the morbid manifestations and epilepsy. Indeed, her attack of furor was like an abortive epileptic manifestation. The homicidal impulses and epileptic conditions are not simply coincidences, but clinical relatives (*Arch. di Psich., Sc. Pen. ed Antrop. Crim.*, Vol. XXIII, Fasc. IV-V.)

ON POLYCLONUS IN GENERAL PARALYSIS. DR. RUGGIERO LAMBRANZI: In June, 1901, the author published an article in the *Rivista di Patol. Nervosa e Mentale* treating of polyclonus in general paralysis. He stated that this was one of the earliest manifestations of the disease. At about the same time, a similar statement was made by J. S. Hermann, in the *Neurologische Centralblatt*, June, 1901. A case of general paralysis was published, in which the polyclonus of the thigh appeared one year before the symptoms of the disease properly speaking were recognized. There were muscular shocks in the lower limbs, especially in the flexor muscles. The contractions appeared now and

then, and at times were so marked that the thigh flexed upon the pelvis, and the leg flexed upon the thigh. The patient went to consult a specialist on account of this motor trouble. When examined, his mental faculties were found to be impaired, the patellar reflexes were exaggerated, the gait was somewhat spastic and there were some pupillary disturbances. These signs immediately suggested the possibility that the patient was suffering from general paralysis. Later on were added disturbances of speech, and the diagnosis was no longer doubtful. Eventually, the disease was fully manifested, and the autopsy confirmed the diagnosis.

The author says that this second case confirms once more his views that the seat of the polyclonus movements is in the cerebral cortex. Murri held this view and he wrote long ago that myoclonus or tics in some subjects were early signs of impending epilepsy or of general paralysis.

The physician should examine carefully cases that suffer from polyclonus. One should be very careful before incriminating hysteria, neurasthenia or degeneracy under these circumstances. One should bear in mind that the seat of this trouble may often be cortical and general paralysis should always be thought of in connection with this manifestation (*Rivista di Pathologia Nervosa e Mentale*, Vol. VII, Fasc. 8, 1902.)

EXPERIMENTAL RESEARCHES IN THE ANTITOXIC PROPERTIES OF THE THYROID GLAND.—Prof. Vittorio

Remedi arrived at the following conclusions regarding the properties of the thyroid gland: Injections of infectious agents into the gland are constantly followed by two prominent manifestations: hypersecretion of the gland and absence of necrotic phenomena in the gland substance properly speaking. In one of his experiments necrosis took place; the necrosis involved, however, not the glandular substance, but the tissues that surrounded it and into which some of the injected fluid had escaped during the operation. From these two facts it may be supposed that the hypersecretion that follows shortly after an injection of bacterial products is intended by nature to neutralize the noxious effect of the infectious agent. From the standpoint of the physiological action of the gland this fact may be interpreted thus: the glandular secretion is destined to reduce the toxicity of the metabolic products of the system. Commenting on the absence of necrosis of the thyroid substance after injections of diphtheritic poison, the author supposes that there exists an antagonistic effect between this poison and the glandular secretion. He thinks that the proof of this lies

in the fact furnished by his experiment: when a moderately large dose of the poison is injected, so that both the glandular substance and the surrounding tissues are infected, necrosis of the surrounding tissues only results; when an overwhelming dose of the poison is injected, however, the glandular substance finally yields and also becomes necrosed (*Lo Sperimentale*, Fasc. IV, 1902).

From the Journal of Mental Science, July, 1902:

1. REPORT OF THE TUBERCULOSIS COMMITTEE OF THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—Phthisis is prevented in the public asylums to an extent which calls for urgent measures.

A very large number of cases of phthisis have acquired this disease after admission to the asylum.

The special causes for this prevalence of phthisis are:

Overcrowding, with consequent insufficient day, and especially night cubic space per patient, insufficiency of hours in the open air, defects in ventilation and in heating, uncleanly habits and faults in dietary.

The means of prevention should be: Early diagnosis of phthisis, isolation of all phthisical cases, limiting the size of future asylums, checking overcrowding, increasing day and night cubic space, restricting the number of beds in dormitories; increased and more thorough natural ventilation, prevention of the spread of the disease by promiscuous spitting, a careful supervision of dietary; there should exist properly constructed and properly situated hospitals and sanatoria with adequate and suitable surroundings for the isolation of these cases and for their treatment on the most modern lines. Failing such special hospitals or sanatoria, there should be set apart either temporary isolation hospitals or special wards and airing courts.

2. TOXEMIA IN THE ETIOLOGY OF MENTAL DISEASE.—Dr. Clouston opened a discussion on this subject at the Spring meeting of the Scottish division of the Medico-Psychological Association. He made a thorough review of the present theories regarding the etiology of the various insanities, laying especial stress on the question of toxemia as a cause of mental derangement. He seemed to be inclined to undervalue the exclusiveness of action of auto-intoxication; he considered the action of heredity as a most potent factor in the causation of insanity. An interesting discussion followed the reading of his paper; some alienists endorsed his views in part.

3. THE SURGICAL TREATMENT OF DELUSIONAL INSANITY BASED UPON ITS PHYSIOLOGICAL STUDY.

—Dr. T. Claye Shaw urges the importance of utilizing surgical operations on the brain for the purpose of finding out how often local cerebral conditions are responsible for the manifestations of various sense delusions. He cited a case of olfactory delusions which supported his point of view: an autopsy performed on this case showed that the olfactory lobes were diseased.

4. SLEEP IN RELATION TO NARCOTICS IN THE TREATMENT OF MENTAL DISEASE.

Rr. Henry Rayner concludes from his experience with insomnia of the insane that the use of narcotics on a large scale is unprofitable and injurious in many instances. His arguments are prompted not only by the results obtained in his vast clinical experience: he demonstrates his point of view by sound physiological reasoning. He compares the recuperative results obtained during physiological sleep to the results aimed at recuperation through the induction of artificial sleep, either by narcosis or by hypnosis. He calls the attention to the following facts: During sleep there is unconsciousness without insensibility; and in the mesmeric state there is disorder both of consciousness and of sensibility. He thus brings out the vast difference between these three conditions; the ultimate results of the effects of these conditions should not be confounded as being identical. Indeed, sleep is found to be accompanied by activity of all the bodily functions (except that of consciousness): Digestion and assimilation may proceed with unabated vigor; respiration, although shallow and slowed by four breaths per minute, has each inspiration increased in duration by a fifth; this form of respiration is probably favored to the absorption of oxygen, which is found to be increased, according to Pettenkofer and Voit; the elimination of carbonic acid is decreased from fifty-eight to forty-two per cent.; this is related, however, rather to the lessened development of carbonic acid in the body than to lessened functional activity of the lungs. There does not seem to be any depression of the cardiac vaso-motor centre, by which similar conditions are produced in narcosis. The lymphatics are more active, as are the excretions; finally, the recuperative process is most evident after natural sleep, while it is not evident after narcosis. Narcosis by either chloral or sulphonal, when induced frequently, produces conditions simulating general paralysis. The continuous use of these indifferent drugs is followed by intense depression. The brunt of the narcotic action falls on the pyramidal cells of the brain, which are called "psychic cells." The dendron changes of the cells

caused by the use of narcotics are similar to the changes of the dendrons induced by acute anemia of the brain or by fatigue. Hydrotherapy should be substituted for narcotics whenever possible; this mode of treatment favors the induction of sleep and promotes elimination of effete matter. If narcotics relieve conditions of anemia or of hyperemia of the brain, they do so in an indirect manner and at the expense of injurious effects, as related above.

5. THE EVOLUTION OF DELUSIONS IN SOME CASES OF MELANCHOLIA. Dr. Lionel Weaterly considers the evolution of delusions in some cases of melancholia to be gradual in onset and dependent on physical as well as on psychic conditions. He advocates institution treatment for these cases in preference to family care, and lays much stress on the effect of moral suasion in such cases.

6. PUPILLARY SYMPTOMS IN THE INSANE AND THEIR IMPORT: Dr. T. P. Cowen thinks that pupillary signs in the insane are of most importance when associated with general paralysis. In this affection the intrinsic muscles of the eyes are affected at some stage of the disease in almost all cases. The first symptom is usually a slight inequality of the pupils, with a sluggishness on the part of the larger pupil to react to light; later on, the larger pupil is found to be more sluggish or fixed and eventually both pupils become fixed and immovable to light. Finally, there may take place impairment of all the reflexes in one or in both pupils. The author looks on general paralysis as on a toxic disease and thinks that the pupillary manifestations, differing so greatly in various cases, are due to toxic effects; the most predisposed tissues are more or less affected according to their resisting power.

7. THE PROPHYLAXIS AND TREATMENT OF ASYLUM DYSENTERY: Dr. N. H. Macmillan considers overcrowding and reduced mental as well as physical conditions of asylum patients as predisposing causes of dysentery. The prophylactic treatment should be carried out according to all rules of antisepsis as well as of asepsis. The patients who assist in handling food for other patients should be made to scrupulously cleanse their hands before touching the articles of food. The treatment should be expectant and symptomatic.

8. THE PSYCHIATRIC WARDS IN THE COPENHAGEN HOSPITAL: Prof. Knud Pontoppidon gives an interesting description of a psychopathic ward connected with the

Commune Hospital, in Copenhagen. The existence of such a ward in connection with a general hospital has a marked moral effect on the community: patients who pass through the psychopathic wards are not stigmatized as undesirable members of the community. Another purpose served by the existence of this ward in connection with the general hospital is the following: the student in general medicine who works in the general hospital has every facility to familiarize himself with the elementary principles of psychiatry, and the medical Faculty make it obligatory for him to pass a creditable examination in mental diseases before he is allowed to take his medical diploma.

9. CALCIFICATION OF THE PERICARDIUM: Dr. Francis O. Simpson publishes a case of calcification of the pericardium in an insane subject, in whom the condition was not suspected during life. Such cases are not often observed in ordinary practice.

10. THE ASSOCIATION OF ASYLUM WORKERS: This Association numbered 4,116 members, in 1901. Medals were distributed to some of the members of this Association who had distinguished themselves in their respective work.

11. LUNACY LEGISLATION: According to the English Lunacy Legislation, the retired superintendents of hospitals for insane are not allowed to conduct private hospitals for the insane, if the superintendents in question are pensioned by the State.

This legal disability of the pensioned superintendents is deplored by the medical profession, because, it is said, the public is thereby deprived of having most valuable services of experienced alienists.

COMPLETE ABLATION OF THE THYRO-PARATHYROID APPARATUS IN DOGS; TREATMENT WITH ORGANIC PREPARATIONS OF BROMIDES AND IODIDES.

—Drs. G. Coronedi and G. Marchetti conclude from their experiments that the fatty-organic preparations of the bromides and the iodides are beneficial in cases of complete ablation of the thyro-parathyroid apparatus in dogs. The medicament was administered in the majority of cases before the performance of the operation; the effects produced by this mode of treatment were not only an attenuation of the general manifestations, but the dystrophic phenomena were also aborted. Besides, the life of the animals seemed to be prolonged in a more or less normal condition. The advantage of feeding the animals with fatty-bromide preparations lies in the fact that these preparations are easily assimilated and well

tolerated. These results are based on experiments carefully performed and the facts of the complete absence of the thyro-parathyroid apparatus was carefully ascertained.

Gley claims that similar results are obtained by administering simple bromide salts; but the author claims that these salts only attenuate the nervous phenomena, without saving the animals' lives.

The results of the treatment with the fatty preparations of the iodides are not quite as simple and convincing as are those of the treatment with the bromides (*Rivista di Patologia Nervosa e Mentale*, Vol. VII., Fasc. 6).

SUBCORTICAL TUMOR; OPERATION.—DR. G. M. SCHLAPP: The patient states that ten years ago he was struck on the head with a barrel. No history is given of what followed after the accident. Three years ago the patient had a sudden convulsion, lasting about half an hour. One week later, the patient developed Jacksonian epilepsy, the attacks recurring about every three months. There was no history of congenital syphilis. He came to the Clinic at the Presbyterian Hospital in the middle of July, with the fingers paralyzed, in a claw position. There was paresis of the face, ankle clonus and increased knee-jerks. There was no disturbance of the tactile sense. A diagnosis of subcortical tumor was made. Dr. Woolsey operated on the man's brain and found there a cyst, about three inches in diameter, within which, and adherent to its wall, was a tumor. The tumor was peeled out easily and when examined proved to be a fibroma. The patient benefitted considerably by the operation (*Boston Medical and Surgical Journal*, Dec. 11, 1902.)

INSANITY IN SYRACUSE.—Syracuse furnishes more insane subjects than any other place of similar size in the United States. About 75 per cent. of all the patients in the Ogdensburg Hospital for the Insane, are from Syracuse (*American Medicine*, Dec. 20, 1902).

BOOK REVIEWS.

PSYCHOTERAPIA. With twenty-two cuts in the text. By DR G. PORTIGLIOTTI. Ulrico Hoepli, Milan, 1903. Unlike the majority of works treating of hypnotism as a therapeutic agent, this work is free from the spirit of fanaticism. Hypnotism is credited with giving satisfactory results under certain conditions,

when there exists no organic lesion at the root of the ailment. The author treats of his subject in a manner of an indifferent philosopher,—seeking for the truth wherever it is to be found, be that in the histories of the miraculous cures by Christ, at Lourdes, by king, priest or physician. The author is not astonished at the numerous excellent results obtained from the use of suggestion or of hypnotism. He says that no matter how incomprehensible the process of cure by suggestion or by hypnotism appears, this process is in reality very simple: living beings are by their natures open to suggestion. For the proof of this truth one only has to glance at the history of humanity as a whole: the essence of all our laws, customs, morality, religion, government and our entire existence is based to a large extent on suggestion.

The volume contains 317 pages and is divided into twelve chapters. The first chapter treats of general considerations relating to the five senses and to the role they play in our psychic life. The chapter following treats of retrospective psychotherapeutics, including medical suggestion among the savages and the ancient peoples of various countries; the great epidemic of hysteria and of miraculous cures during the mediæval age is carefully considered and is most readable. An entire chapter is devoted to the study of suggestionability, and the chapters that follow treat of the various methods employed in clinical work and, finally, numerous clinical cases are recorded in which hypnotism was successfully applied. The clinical value of this work is incontestable because it is based on facts well known to the profession. From a general point of view, the author deserves praise for the painstaking effort in the compilation of the work; the little volume is full of historical facts not only of our own day, but also of the remotest periods of human existence. Among the illustrations of miraculous cures are copies of old paintings, of classic scenes in clinics and of various amulets of savages.

THE TREATMENT OF TABETIC ATAXIA BY MEANS OF SYSTEMATIC EXERCISE. AN EXPOSITION OF THE PRINCIPLES AND PRACTICE OF COMPENSATORY MOVEMENT TREATMENT. By DR. H. S. FRENKEL, of Heiden, Switzerland. Only authorized English edition, translated and edited by L. FREYBERGER, M. D., (Vienna), M. R. C. P., Lond., M. R. C. S., England. With 132 illustrations. P. Blakiston's Son and Co., 1902. The translator states in his preface that this edition is not a translation of Dr. Frenkel's book, but an adaptation of it to the requirements of the medical practitioner, whose chief interest of necessity centres in being enabled

to treat the ataxia of his tabetic patient. He therefore omits all controversies relating to this subject. He further says that wherever possible, the English version follows closely the language of the original, but that idiomatic difficulties have not infrequently made it necessary to translate rather freely and that every care was taken to preserve the meaning of the original. The work is divided into two parts. The first part treats of the general notions relating to the study of tabetic ataxia. The points touched upon are: the various types of tabetic ataxia, coordination, the causation of tabetic ataxia, examination of sensibility, of the muscle and joint senses, etc. A large chapter is devoted to the consideration of muscular hypotonia and illustrations are given for comparison between the postures that can be assumed by the normal subject, whose muscle-tonus is normal, and by the ataxic subject, whose muscle tonus is generally reduced. He lays particular stress on the impairment of the sensibility of the skin, the limbs, the joints and the muscles, and considers these as so many factors in the causation of ataxia. He thinks that the paralytic stage is not caused by a complication of tabes by a lesion of the motor portion of the spinal cord, because he does not know of any post-mortem proofs to this effect, and because in some cases it is possible to convert the paralysis into simple ataxia. He thinks that partial loss of sensibility causes ataxia and that total loss of sensibility produces paralysis. An important point in relation to the ataxic is that he forgets to shift the centre of balance when he walks. The healthy person shifts this balance automatically. Rhomberg's sign is explained by the fact that the ataxic subject, whose various sensory senses are impaired, finds a great help in the use of his sight, which helps him get his bearings in relation to his physical surroundings. He says that a few cases have been reported of blind tabetics who showed Rhomberg's sign whenever they shut their eyes, but the author has never met with a similar case. He says that the only explanation that can be given is that these patients still had some perception of light. He insists that the loss of sensation is the only cause of the ataxia and that otherwise it would be difficult to explain the good results obtained from systematic training and exercise of the muscles. The second part of the work is devoted to the consideration of the practical application of exercises in the treatment of tabetic ataxia. Numerous illustrations of high grade are given to explain the methods employed in the re-education of the various muscles of the ataxic. This is, indeed, a useful book for all physicians who may have to handle ataxic patients. The book consists of 185 pages and contains a good bibliographical list.

LES OBSESSIONS ET LA PSYCHASTHENIE. By DRS. F. RAYMOND, *Professor of the diseases of the nervous system and physician to the Salpêtrière*, and Dr. PIERRE JANET, *Professor of psychology, Collège de France and Director of the psychological laboratory, Salpêtrière*. Felix Alcan, Paris, 1903. This is a complementary work to one that the authors published in 1898. The subjects treated of in this volume come under the following headings: neurasthenic conditions, aboulias, sentiment of incompleteness (incompletude), diffuse agitations and anguish, algias, phobias, delirium of touch, tics, mental manias, insanities of doubt, obsessional ideas, impulses, and the pathogenesis and treatment of these affections. The starting point of the neurasthenic conditions is an enfeeblement of the vital functions, especially of the central nervous functions. Hereditary predisposition is at the root of this trouble and accessory causes may complicate or accompany the primary cause. Infections and auto-intoxications, especially of sexual origin, may be among these causes. In his work on puberty, Professor Marro has made a special study of this latter cause. He found that, in woman, the quantity of carbonic acid gas exhaled remained stationary from the time of the first menstrual epoch; there is even a diminished quantity of this gas under the conditions indicated. According to other theories a too slow or a too hasty maturation of the sexual products may be the cause of the neurasthenias. A group of affections intimately related to the preceding one is that which the authors term *sentiments of incompleteness* (incompletudes). The characteristic traits of this disease are incompletely developed faculties of association in relation to apperception. Diffuse agitations comprise rather somatic agitations, although they may sometimes be of motor and emotional nature. The motor agitations that characterise the well known neuroses should not be confounded with these agitations. The algias and the phobias are also due to an enfeebled condition of the nervous system. Tics take place in subjects incapable of governing their mental status; they are slaves to their impressions that force them to repeat certain acts. The next group of patients examined is that comprising subjects who are perpetually tormented by various hesitations, repetitions, symbolisms, precautions, expiations, premonitions, etc., etc. The obsessions are due to a diminished power of volition and emotion. These patients say that they are very sensitive to their surroundings, but in reality this is not true: their feelings are rather stunted to a marked degree. The treatment of these various cases depends on the conditions and the degree of the affection. Although it is generally understood that these

cases are obdurate, it is found in reality that they are most amenable to reasoning and suasion. This point is of importance to the clinician who has to treat them. The volume consists of 543 pages and numerous clinical cases illustrate the various groups of affections. Besides the general index, there is an analytical index of all the subjects treated of in the volume.

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ON THE EARLY DIFFERENTIAL DIAGNOSIS OF MORBID PROCESSES INVOLVING THE BASE OF THE BRAIN.

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The physician frequently comes across diseases that he has no trouble in diagnosing as being affections of the base of the brain, but he quite frequently remains in doubt regarding the nature of these affections. The reason of this is that the diseases of the base of the brain may be of various natures. Thus, the base of the brain may be the seat of new growths, of tubercular or of syphilitic meningitis, with or without neuritis. The importance of making a correct diagnosis in such cases is quite obvious: the prognosis of the disease depends entirely on its pathogenetic cause. Although the leading neuropathologists have made every endeavor to present the criteria of these various affections, the value of these criteria is not absolute. Thus, according to Bernhardt (1), the only criterion of neoplasms of the cerebral base is the result of antisyphilitic treatment: the lack of good results from this treatment after a long period of its application justifies the diagnosis of

a neoplasm. Similarly, according to Oppenheim (2), in difficult cases of basal meningitis antisyphilitic treatment alone can establish the differential diagnosis. According to Gowers (3), the criterion of these diseases is their course.

During the last few years I have had occasion to handle a few cases of basal disease; some of them ended in death and autopsies were performed on them; others recovered under anti-syphilitic treatment that demonstrated the nature of the disease beyond any doubt. Considering the difficulty presented by this clinical subject I have thought it opportune to investigate it and to find out whether it is possible to facilitate the making of a correct diagnosis of these affections even when their aspects seem to be obscure.

I base my work on clinical observations that will be cited below.

Case I.—*Syphilitic basal neuritis with meningitis.*

M., married, 30 years of age, of strumous constitution. Her heredity is negative and she denies having had syphilis. She has been married ten years. She gave birth to a child soon after her marriage and the child is healthy. She has not had any other children. Since adolescence she has been subject to attacks of hemicrania. January, 1899, she began to complain of persistent and increasing headaches, particularly marked in the occipital region. These headaches were equally marked during the day and at night. One month after the onset of these headaches the patient became subject to spells of vomiting that were accompanied by loss of consciousness and involuntary losses of fecal matter. She did not have any convulsive manifestations. Two days before I saw her she complained of seeing objects double. This diplopia took place when the patient looked towards the left; the left eye was then turned somewhat inward.

April, 1899, an examination showed the following: The movements of the right eye were normal. The movements of the left eye were all normal, except that of rotation outwardly, that was somewhat limited. The active and passive movements of the limbs were normal. The patellar reflexes were exaggerated. Hearing and smell were normal.

The acuteness of vision was considerably diminished on both sides and it was about $1/20$ on the left side. Dr. Fortunati made an ophthalmoscopic examination and found bilaterally papillary passive congestion that was more marked on the left. The temperature was normal and the urinalysis was negative.

December 10, 1899.—Antisyphilitic treatment had been administered during a period of several months and on the above mentioned date an examination showed that all disturbances had dis-

appeared. The papillæ were absent and the vision was equal to 1, or the normal. The patient no longer complained of suffering from headaches, and her vomiting had stopped. April, 1903, two and one half years after my last visit, the patient was in excellent health.

The difficulty in diagnosing a case like the one cited above is self evident. It was rather justifiable to exclude the diagnosis of a tubercular gumma because of the good physical condition of the patient, of the absence of febrile evidences and because of the absence of tubercular processes in other parts of the body than the base of the brain. On the other hand, it was not quite as easy to determine whether the case was one of incipient basal neuritis, of syphilitic basal meningitis or of a basal neoplasm. The symptom-complex that consisted of vomiting, cephalalgia, marked amblyopia, papillitis and paralysis of the abducens muscle pointed towards the presence of a new growth in the cerebellum; this supposition was the more justifiable because the cephalalgia was now diurnal, now nocturnal, and the patient had never had any abortions and had never presented any signs of syphilis. The successful anti-syphilitic treatment of three years' duration and the complete cure of the patient leaves no doubt as to the syphilitic nature of the affection.

Case II.—*Syphilitic basal neuritis with incipient meningitis of the convexity.*

F. C., 24 years of age, has negative hereditary history. In 1901, she suffered from vertigo and headaches. This was followed by general fatigue. The pain in the head commenced on the left side and extended to the right and also to the right arm. Later on she began to suffer from pains in the lumbar region, particularly at night. Finally, there was added crossed diplopia and major amblyopia on the right side, accompanied by flashes before the eyes and ringing in the ears.

Examination made February 22, 1902.—There was paresis of the right internal and external recti, slight exophthalmus on the right, paralysis of the inferior branch of the VIIth nerve on the right, decreased muscular force of the right limbs, abolished patellar reflexes, almost complete rigidity of the iris under the influence of light; formication in the left hand, hypæsthesia in the left half of the body, Romberg's sign; compression of the eyeballs was not painful; the hearing was normal. The right eye could not recognize correctly light and dark sky-blue colors and yellow was mistaken for red. The left eye distinguished colors correctly. Visual acuteness was below 1/20 in both eyes.

An ophthalmoscopic examination showed the presence of bi-

lateral passive congestion of the papillæ, more marked on the right side. The temperature was normal and the psychic state was good.

March 7, 1902.—After ten days of treatment including mercury and two grams of potassium iodide per day, the cephalic pains ceased and there was an improvement of the general condition.

March 11, 1902.—The cephalalgia reappeared in an intense degree involving the right occipital and parietal regions. The flashes before the eyes, the ringing in the ears, the amblyopia, the paralysis of the right rectus externus and the exophthalmia disappeared, however. The diplopia persisted only if the patient looked aslant. The reaction of the pupils was normal. She could stand upright without having vertigo. Romberg's sign was absent. She had mercurial stomatitis and a slight elevation of the temperature during some three evenings in succession that was brought down to the normal by the administration of quinine.

April 2, 1902.—The mixed treatment was resumed in conjunction with injections of strychnine and applications of the Galvanic current to the frontal and ocular regions. The cephalalgia persisted in the right frontal and ocular regions. The acuteness of vision still remained somewhat impaired. The left convergent strabismus was absent. The eye lids were edematous in the morning. There was formication in the left hand. The gait was normal. There was a slight degree of vertigo. Romberg's sign was absent. The temperature was 37.3 degrees C., but came down to 36.8 degrees C. During the few months that followed, the disturbances gradually decreased and disappeared under the antisyphilitic treatment. March 1, 1903, the patient was free from all disturbances mentioned above.

When I first examined the patient she presented a symptom-complex that spoke in favor of a lesion of the base of the brain. Indeed, I found alternate paralysis of motility and sensibility, partial internal and external ophthalmoplegia, more marked on the right, Romberg's sign, ringing in the ears, marked amblyopia right hypoosmia, nocturnal cephalalgia, vertigo and papillary stasis. Later on other symptoms were added. They consisted of impaired motility and sensibility on the right side of the body, preceded by pains in the left side of the head. These symptoms necessarily pointed to the existence of an irritation in the Rolandic region on the corresponding side. The absence of fever and of tubercular heredity made me exclude the supposition of there being a tubercular element in this trouble. I was uncertain, therefore, whether I was dealing with a syphilitic basal neuritis with meningitis, or with an incipient tumor of the pons with some involve-

ment of the convexity. Indeed, the cephalalgia, the vertigo and the papillary stasis favored the supposition of the existence of a new growth, whereas none of the symptoms pointed to the existence of syphilis. Besides, the patient assured me that she had never had any abortions and on her body there were no traces whatever of syphilitic disease. My suspicions rested mainly on the nocturnal predominance of the cephalalgia with the accompanying disturbances mentioned above, although some of these disturbances spoke in favor of the existence of a basal neuritis and others pointed rather to the existence of incipient meningitis (or arteritis) *convexitatis*. My doubts regarding the nature of the affection were dispelled after the patient had been under antisyphilitic treatment during a period of some few months: The disappearance of her disturbances was due directly to the antisyphilitic treatment.

Case III.—*Gumma luetica cervicis dexteræ. Inde neuritis basilaris.—Obitus.*

C. V., 42 years of age. He denies having had syphilis and claims to be temperate in the use of alcoholic drinks. He has often been exposed to sudden changes of temperature. October, 1901, he began to suffer from diffuse pain in the right side of the nape of the neck. The pains then extended to the face and the limbs. These pains were more severe in degree at night. The trouble increased gradually until May 26, 1902, when one morning, the patient was surprised to find himself unable to speak distinctly when arising. From that time on the intensity of the headaches kept increasing and they were most marked at night. He was free from these severe headaches only during the last few days before examination. The patient does not know whether his tongue deviated May 26, when his speech became thick. Some two weeks ago, however, he noticed, while standing in front of a mirror, that his tongue was deviated to the right and that it was somewhat wasted on the right side. Dating from that time, he has had a sensation as if his tongue were "tied."

Objective examination, August, 1902.—There was nothing of note in the condition of the ocular or the facial movements. The muscular movements of the upper and lower limbs were normal. The pupillary reactions to light and to accommodation were normal. The knee reflexes were normal. The sensibility to touch, heat and pain was well marked all over the body. Vision, hearing and smell were normal. The right anterior pillar of the palate was effaced. The right half of the soft palate was lowered and when in action the same side did not lift up as high as the left side. The right half of the tongue was decreased in size to almost half

the volume of the left side. The surface of the wasted half of the tongue was covered with large folds that gave it an irregular appearance. The affected side of the tongue was flabby to the touch. When the patient put out the tongue it deviated to the right. The lateral and lowering movements were well preserved. There was difficulty, however, in lifting up the tongue. It was impossible for the patient to curl up his tongue lengthwise. The right side showed marked fibrillary movements. These movements were equally marked in degree all over the right half of the tongue.

The right tongue was not sensitive to pain. Acid substances were perceived less on the right side, while all other substances were recognized by taste equally well on both sides. The right side of the tongue did not contract even when strong Galvanic currents were applied to it. An application of the Galvanic current showed that the anodal closure contraction was stronger than the kathodal closure contraction. The contractions under this current were quite sluggish. On the left side the contractions caused by either of the currents were normal. The right hypoglossal nerve did not respond to stimulation even by combined currents. The rest of the objective examination was negative.

October 20, 1902. The patient has noticed that since August the atrophied side of the tongue has been improving. Alongside with this improvement gradually developed a protruding tumefaction in the right side of the neck. Since some time the patient has been complaining of having severe nocturnal headaches of a diffuse nature. He has not had any spells of vomiting or of vertigo. Within the last few days the right eye has been turned inwardly. When looking to the right the patient has diplopia as well as amblyopia.

The objective examination showed that the right VIIth nerve was paralyzed: the patient could not move his right eye beyond the median line; closing of the eye lids is incomplete. During repose the right labio-nasal fold is completely effaced, while that on the left side is well marked. The left angle of the mouth is turned outwardly and the same disturbance is noted when the patient laughs. The right palatine pillars are effaced in shape and form a protruding mass with the right tonsil. The uvula is markedly deviated to the left. The voice is markedly nasal and the articulation is fairly good. Some consonants, such as *z* or *s* are pronounced flatly. The right half of the tongue is diminished in size, its surface is rough with folds, is free from fibrillary movements and the atrophy is less marked than it was a few months previously. When the tongue is put out it deviates

markedly to the right. The opening and shutting of the mouth is done normally. The knee reflexes are absent.

The right pupil is smaller than the left, the right being rather narrowed. The left pupil reacts well to light, while the right one does not respond at all.

Cranial percussion is painful, although not excessively. Compression of the eye balls and of the supra-orbital nerves is painful, but the pain is more marked on the right side. The sense of touch, heat and pain is normal on both sides. Vision equals 1 on the left and 1/5 on the right. The right papilla is anemic. Chromatopsia is normal. The taste of salt is impaired. When acid, sweet or bitter is applied, all taste as acid to the patient. In the right angle of the neck is seen a protruding mass, half the size of a hen's egg, that is immovable and hard to the touch and the skin that covers it is tense. The mass seems to be quite adherent to the carotid artery and to the underlying blood vessels. This growth extends into the cavity of the mouth on the right side, posteriorly, and pushes the palatine arch forward.

The patient went away to the country, but returned and consented to undergo antisyphilitic treatment. He was given iodides and injections of bichloride of mercury. After a few of these injections the swelling disappeared almost completely. The paralysis of the VIth nerve on the right was equally improved; the visual acuteness in the right eye was improved, the cephalalgia was abated and the hemiatrophia of the tongue almost disappeared.

The patient suddenly suspended the antisyphilitic treatment and one month after he had a severe attack of intraventricular cerebral hemorrhage that caused his death.

The course of the disease leaves no doubt regarding the nature of the cause that brought about hemiatrophia of the tongue. At first the patient had a severe nocturnal pain in the right side of the nape of the neck and of the face; this was followed by a marked atrophy of the right half of the tongue. Two or three months later, a deeply seated tumor appeared in the right angle of the neck and was adherent to the blood vessels. An examination during this stage of the disease showed paralysis of other cerebral nerves, while the atrophy of the tongue was disappearing. Antisyphilitic treatment finally caused the disappearance of the tumor, the paralysis and atrophy of the tongue became less marked, the paralysis of the other cranial nerves was ameliorated and the general condition of the patient improved. Death took place some time after a complete suspension of antisyphilitic treatment. A cerebral hemorrhage was the direct cause of death.

The above cited history leaves, therefore, no doubt regarding

the genesis and cause of the hemiatrophia of the tongue. The disappearance of all the symptoms—hemiatrophia of the tongue, paralysis of the cranial nerves, the tumor of the neck,—under antisyphilitic treatment, and the nocturnal pains that preceded these symptoms as well as the sudden death from cerebral hemorrhage that followed the suspension of the treatment,—all speak in favor of a severe syphilitic infection. To be more precise, a syphilitic gumma set in in the suprahyoid region, involving the trunk of the right hypoglossal nerve. The growth subsequently extended outwardly, diminishing the pressure on the nerve; this was followed by partial diminution of the atrophy of the tongue; the lesions of the other cerebral nerves then disappeared under the specific treatment. The cerebral hemorrhage that caused death was due to malignant cerebral syphilitic infection well known in clinical practice.

This case was difficult to diagnose when it presented itself. The syphilitic nature of the disease could be determined after the successful results obtained from antisyphilitic treatment, although the patient denied having had any syphilitic infection. The seat of the trouble was not quite as easy to define, however. The supposition of the existence of a nuclear lesion was excluded: signs of tabes, syringomyelia and amyotrophic lateral sclerosis were absent; the fibrillary tremors, on the contrary, and the reaction of degeneration spoke in favor of there being a lesion either of the root or the trunk of the hypoglossal nerve [Dinkler (4), Biancone]. Another supposition that could have been made was that the case was one of unilateral labio-glosso-laryngeal paralysis. Two such cases were presented in my laboratory by Professor Geronzi. This hypothesis was easily excluded, however, on account of the absence of the other accompanying disturbances of the bulbar nerves.

I was thus led to make a diagnosis of hemiatrophy of the tongue of peripheral origin. It remained to be determined whether the disease commenced in the root or in the trunk of the hypoglossal nerve. According to Dinkler, the decision of a question like this one depends on rather dubious signs. Thus, according to him, in a case like the one cited above, the guiding signs for the diagnosis of a radicular lesion should be: Paralysis limited to the right hypoglossal nerve, gravity of the functional disturbances in connection with speech and mastication and limitation of the impaired movements to the tongue only. He remarks, however, that the above indications should not be considered as absolute guides because grave functional disturbances are also apt to take place under combined conditions in which the hypoglossal nerve is involved otherwise than indicated above.

I wish to make one more remark with reference to the history of my patient. The latter stated that the trouble of speech came on suddenly, one morning, as he was getting out of bed. As a matter of fact, however, such a disturbance is of insidious and slow onset and its development is gradual. Pastrowitz reports a similar case of lingual hemiatrophia of alcoholic nature, in which the patient was the first to call the physician's attention to the trouble, while, as a rule, it is the physician who generally calls the patient's attention to the disturbance.

As regards the unilateral lingual paralysis, it is generally asserted that the active motility of the tongue is not impaired in such cases? Trauman and Remak are the ones who have called attention to the difficulty in extending the tongue laterally. S. Weir-Mitchell called attention to other motor disturbances of the tongue. My observations in the above cited case are in accord with those of these authors. Thus, while my patient could lower and turn the tongue laterally, he could not lift it up or bend it. Finally, I wish to call attention to the fact that there are no cases recorded of lingual hemiatrophia due to a syphilitic gumma of the neck. The only similar case, published in 1878, is that of Bernhardt (5); in his case the unilateral paralysis of the tongue was caused by a swelling of the cervical lymphatic glands. In 1880, Hutchinson also described another such case that was due to severe swelling of the cervical glands.

Case IV.—*Sarcoma ossis sphenoidis sinistri.*

J. C., 30 years of age, Neapolitan, dressmaker, has been married two months. Her mother died of some paralysis, and her father died of cerebral hemorrhage. One brother is suffering from syphilis; one sister seems to suffer from paralysis of the left VIIth nerve and six brothers died of various diseases.

The patient says that seven years ago she began to suffer from glandular swelling of the neck and a surgeon had to cut out some of those tumors. At about the same time she had a severe attack of headache on the right side. The pain was more marked at night, disappeared and reappeared during the following few days and finally left her altogether. Some time ago the patient began to suffer from buzzing and ringing in the left ear. September 20, 1901, she had general weakness of a marked degree and she suddenly fell to the ground and lost consciousness. On regaining consciousness she had a slight spell of vomiting. This attack was followed by diplopia and at night the saliva dripped from the left side of the mouth. She was brought to the hospital September 21, 1901. She was in a condition of absolute mental confusion and was unable to give any account of herself.

Objective examination September 25, 1901.—The superior branches of the facial nerves were intact on both sides. The left inferior facial was paralyzed. The tongue was completely protruding and was at times slightly deviated to the right. There were no tremors of the tongue.

The upper limbs.—The active movements were normal and complete on the left side, but incomplete on the right side, the patient being unable to lift up completely her right arm. Passive movements were normal on the left side, while on the right there was resistance when these movements were attempted. Both active and passive movements were normal in the lower limbs. The muscular force was good in all the limbs. The knee reflexes were responsive in both limbs, but were more marked on the right side. All the upper tendon reflexes, except the radial, were absent. The corneal reflexes were abolished on the left side. The foot clonus was absent. The plantar reflexes were well marked in both feet.

The pupils were equal and reacted well to light and accommodation. The movements of the ocular muscles were good, save that of the right abducens and sometimes also that of the left one that easily tired. The palatine arch was lowered on the left side.

In the left ear the patient heard a noise similar to that produced by a moving railroad train. This noise caused her another noise in the head that she likened to the beat of a hammer. Besides this she heard a ringing noise in the left ear and in the head. When standing up she felt as if everything about her were reeling.

The sensibility to touch, heat and pain was diminished on the left side, in the trigeminal region. This sensibility was normal in the other parts of the body. Compression of the Vth nerve was more painful on the right side. Vision was normal. Ophthalmoscopic examination was negative. Hearing and smell were abolished on the left, but normal on the right side. The uvula was deviated on the left side. The patient said that she could chew better on the right side. She regurgitated her food through the nose. The left masseter muscle was atrophied and presented marked reaction of degeneration. Mentally she presented a marked confusion of ideas. She could not fix her attention on anything, her perception was slow and she easily tired. She could not remember past facts about herself so that it was impossible to make her give the history of her present disease. She had neither illusions nor hallucinations and remained in a condition of profound apathy. She took no interest in her own condition that was grave and did not inquire about the possible issue of her disease. At times she became fretful and agitated. She had no notion of time or space and her mental condition changed considerably from day to day.

October 12, 1901. Although the patient was kept under anti-syphilitic treatment to a generous degree, her condition went from bad to worse. She vomited so easily that the introduction into her stomach of a small quantity of water was sufficient to provoke an attack of vomiting. The headache was severe and of a grave nature. The patient remained in bed all day in a condition of complete apathy. She then developed right ptosis. The other ocular muscles remained intact and the above mentioned symptoms remained stationary. There was no sign of neuro-paralytic keratitis. There was no fever. The patient died November 7, 1901.

AUTOPSY.—A tumor was found of the size of a small lemon, lodged in the substance of the brain. This tumor extended from the apex of the left temporal lobe and was directed posteriorly. It compressed the gyrus hippocampus and the middle part of the fusiform lobule and formed a true excavation in its posterior part; it was then directed upon the clivus Blumenbachii, crushed the whole left side of the pons and the nerves that have their origins there. On the opposite side the sella Turcica was involved by extensions and the ophthalmic artery was similarly affected. The histological structure of the growth was that of a sarcoma.

The above cited case is of interest from the standpoint of the extraordinary difficulty it presented diagnostically.

Indeed, although the patient's history did not particularly speak in favor of tubercular infection it took me a long while to exclude it from consideration. The death of her seven brothers led me to suspect that she had a tubercular heredity; this suspicion was strengthened by the fact that the patient had suffered from glandular swelling of the neck that required surgical interference. I had a vague suspicion of there having been a syphilitic infection, as the patient had had severe headaches that were more marked at night and had appeared and disappeared at various intervals. Indeed, it is a well known fact that syphilitic gummata may be preceded by cephalalgia of frequent appearance without incapacitating the patient otherwise. On the other hand, the objective examination made a few days after the commencement of the active trouble showed the following: On the left side there was hyposmia, atrophy of the masseter muscle, hypoaesthesia of the region supplied by the trigeminal, anaesthesia associated with paracousia, paralysis of the inferior branch of the facial nerve and of the abducens muscles, especially marked on the right side. Besides, the patient suffered from spells of vomiting, severe cephalalgia and mental confusion.

In a word, the symptom-complex led to suspect the presence of a neoplasm of tubercular origin involving the left side of the pons.

Indeed, this was my diagnosis, especially when the antisyphilitic treatment remained inefficacious. This diagnosis of a primary tumor of the pons was made plausible by the fact that the patient had a sensation of ringing and hammering in the left ear, by the paralysis of some of the muscles supplied by the trigeminus nerve (Oppenheim), the pain of the left trigeminus caused by pressure, cutaneous hypoaesthesia of the region supplied by this nerve, the atrophy and reaction of degeneration of the left masseter muscle, the patient's inability to masticate on the left side and, finally, the negative ophthalmoscopic examination. I call particular attention to the statements regarding the condition of the masseter muscle because Oppenheim (6) admits having had a case of a tumor in the middle cranial fossa in which there was atrophy of the mastication muscles, diminished Galvanic and Faradic excitability of the same muscles, but there was absence of reaction of degeneration. The presence of some isolated symptoms that do not generally accompany the initial stages of a cerebral tumor of the middle fossa made the diagnosis still more obscure. One of these symptoms was the ringing in the left ear that was followed by a sensation of noise in the head similar to that produced by a moving railroad train. Such symptoms generally point to a reflex effect of a compression of the anterior part of the temporal convolution. However, the above supposition is viewed, it is admitted clinically and physiologically that cortical compression of this convolution may be expressed by auditory hallucinations. It may be said, then, that the marked hyperacusia was due to a more or less indirect compression of the left acoustic nerve, particularly so because the lower facial and the abducens of the same side were parietic. It does not seem necessary to incriminate here, as some authors wish it, the synchronous involvement of the trigeminus. Other authors claim that both areas of the trigeminus are apt to be involved in case of an extension of a basal tumor from one temporal fossa to the other; the functional disturbances in both territories of the trigeminus are especially marked when the growth and extension involve the sphenoidal regions. This could precisely be verified in our case. The pain became more marked in the right trigeminal region when the growth of the neoplasm must have been arrested on the left side. It seems that in this case the tumor must have caused an indirect compression of the trigeminus of the opposite side. The absence of amblyopia and retinal lesions have been noted in cases of tumors of the middle fossa. I wish to draw special attention to the fact that within a short space of time—about one month—the patient presented marked psychic defects that are seldom seen in connec-

tion with a cerebral tumor even when this is of large size: Thus, the patient suffered from impaired perception, marked loss of memory, impaired judgment and marked apathy and indifference to her own condition. In a word, she presented marked mental confusion.

Case V.—*Meningitis tubercularis cronica pedunculi cerebri dexteri.*

S. C., 19 years of age, domestic. The patient's mother died of lung disease. During the last three years the patient has been suffering from weakness and pallor. She recovered from this trouble by taking iron preparations.

December, 1899, the patient suffered from a persistent bronchial catarrh. January, 1899, she had an attack of influenza. In February she noticed that her right upper eye lid began to droop and eventually the trouble gradually increased; at the same time she began to suffer from diplopia. The false image was seen on the left side, horizontally. The ptosis finally became complete. The patient was put on arsenic and strychnine treatment, but this was not followed by any improvement. On the contrary, the patient began to suffer from headaches that were more pronounced at night and from pain in the right leg. To this was soon added vomiting at night and general physical and mental debility.

Objective examination, April, 1900.—The movements of the right eye were limited in the upward, downward, inward and outward directions. When making a great effort the patient succeeded in lifting somewhat the upper eye lid. The movements of the left eye were all normal. A binocular examination gave the same results as those obtained by a monocular examination, mentioned above. The active and passive movements of the limbs were normal. The anal and vesicular sphincters were in good condition.

The tendon reflexes were normal. The reaction to light was impaired in the right pupil. The sense of touch, heat, pain, smell and hearing was normal. Visual acuteness was diminished on the right side. An ophthalmoscopic examination was negative.

The patient was then put on antisyphilitic treatment and an examination made April 10, showed that the disturbance of the ocular muscles was decreased.

November 28, 1900, the patient presented tubercular infiltration of both pulmonary apices. The preceding May, the ocular muscles were again completely paralyzed, besides, the left upper limb presented a diffuse rhythmic tremor (syndrome of Benedikt).

The condition of the patient went from bad to worse and she finally died February 22, 1901.

AUTOPSY.—The following conditions were found: Chronic tubercular meningitis at the base of the brain with compression of the right cerebral peduncle. Chronic ulcerative pulmonary tuberculosis (Dr. Nazari).

The diagnosis of chronic tubercular meningitis in the vicinity of the base of the right cerebral peduncle imposed itself two months after I had seen the patient for the first time. This diagnosis was supported by the fact that the paralysis of the right ocular muscles and the tremor of the left upper limb (syndrome of Benedikt) developed in spite of the antisyphilitic treatment of the patient. The development of tubercular infiltration in the pulmonary apices removed all doubt regarding the tubercular nature of the trouble around the *pes pedunculi*. The diagnosis was not quite clear when I first saw the patient: She complained of having a bronchial catarrh, a headache that was worse at night than during the day and that was sometimes followed by vomiting. An objective examination showed that the reaction of the right pupil was impaired, the acuteness of vision was diminished and there was paralysis of all the motor muscles of the right eye. Besides, the patient showed mental impairment. The seat of the trouble was not to be mistaken, however. It was evident that the trouble was located at the base of the cerebral peduncle. It was evident also that the substance of the peduncle and the pons was intact because there were no signs of irritation in the pyramidal paths. The nature of the affection, however, remained unknown. Several plausible morbid conditions suggested themselves: Syphilitic neuritis, chronic tubercular meningitis or an incipient new growth. The following conditions had to be considered, however: The patient's temperature was normal, general rigidity of the neck was absent, the headache was worse at night and the first signs of the disease appeared with the onset of impairment of the cranial nerves on the right side. All this led me to suppose that I was dealing with a case of syphilitic cerebral meningitis, regardless of the fact that the patient was suffering from chronic bronchitis, the probable tubercular heredity on the maternal side and the patient's mental enfeeblement that pointed towards chronic tubercular meningitis. Between the two diagnoses that of syphilitic nature seemed to be more plausible, especially when the paralysis of the ocular muscles improved under antisyphilitic treatment. The autopsy showed, however, the presence of chronic basal tubercular meningitis. It may be concluded, therefore, that *tubercular heredity* and *especially precocious mental impairment* when occurring in doubtful cases of the nature described above should always be taken as indicating the probable presence of a tubercular process. Besides, it is also

seen that nocturnal exacerbation of headache may also be due to tubercular infection. It is also evident that one should be moderate in the making of an absolute diagnosis in this kind of cases.

Case VI.—*Tuberculum pontis et corticis cerebri sinistri.*

P. M., 30 years of age, engraver. The patient's father and mother died of tuberculosis. He has three sisters and one brother and they are not subject to tuberculosis. It is almost certain that the patient has had syphilis. He states that he had an ulcer of the penis when he was twenty years old; this ulceration was not followed by glandular swelling, but a roseolar eruption took place after this infection, and was located particularly in the arm pits. He indulges freely in the use of wine, but does not drink pure alcoholic beverages. After he had had an attack of hemophthisis he stopped drinking wine.

After this hemorrhage he had an attack of bronchial and intestinal catarrh. He then became subject to profuse night sweats. He was then engaged in the military service, from which he was released. During the year following his release from the service he was free from the trouble. He then took up again his military service and seemed to stand well the camp life. When he left the service again, however, he suffered a second attack of pulmonary hemorrhage. From that time on he was subject to a continuous cough, nocturnal sweats and repeated attacks of pulmonary hemorrhages. The latter continued for three years at more or less frequent intervals.

August, 1900, the patient was compelled to give up his work and enter a hospital for treatment. The hemorrhages were soon stopped by appropriate treatment. He improved while he was in the hospital and asked to be discharged forty days after admission. His request was granted, but he returned to the hospital twenty days later.

The patient states that December 13, 1899, he went to bed without noticing anything unusual about his sight, but when he woke up the next morning he was afflicted with diplopia that has persisted to this day. Besides, his sight became impaired; this trouble was especially marked when the weather was bad. The disturbance was more marked on the left side. The false image was on the left of the true one and both images were on a horizontal line. He noticed himself that both eyes were turned inwards. In November, he noticed that the hearing in the left ear became impaired and this trouble progressively increased. January 10, 1900, an abscess suddenly opened in the left ear and the purulent discharge has continued to this day. Within the last

few weeks he has been subject to headaches that are worse at night.

Objective examination.—January 31, 1900. When the patient is looking into distance the right eye seems to be turned inwards. The right upper eye lid is slightly lowered and the left upper eye lid is the seat of continuous chronic twitchings that make it move rapidly upwards and downwards. These twitchings are interrupted at various intervals by marked contractions of the eye brows. The right supraciliary is at times lower than the left one. The patient is unable to make any voluntary movement in the right side of the face: he cannot lift up the lip, the lid, etc. On the left side of the face he can use the various muscles. He cannot whistle. The right lower eye lid is at times turned out and tears drip out of the eye now and then. Monocular and binocular examinations show that the right eye is turned inwards and cannot be turned outwards beyond the median line. The left eye can be turned outward only to a slight degree.

On palpation, the right temporal muscle is less voluminous than the left one. The patient assures me that he can masticate better on the left side.

The right palatine pillar is more lowered than the left one and the uvula is deviated to the right. The left palatine pillar is more freely lifted up than the right one. The neck can be moved equally well on both sides. The patient cannot protrude the tongue well; when he protrudes it as much as he can the right margin of the tongue is seen in a convex line and the left one in a concave curve.

He did not have any disturbance of articulation, but pronounced with difficulty the letter *v*.

The upper limbs.—The left limb did not show any trouble in the execution of active or passive movements or in assuming various positions. The muscular force was good, the dynamometer registering 55. The right limb did not present any special disturbances, but the phalanges had a tendency to be in a position of semi-flexion. The resistance to passive movements was somewhat more marked than on the left side. Muscular movement was good, but the dynamometric indication was diminished, registering 22.

The lower limbs.—There was nothing of note. The muscles were flabby on both sides. The passive movements were normal. The active movements were good, but the patient could not lift up completely the right limb when it was in full extension. The muscular force was less marked on the right side than it was on the left one.

Micturition and defecation were normal.

The knee reflexes were marked, particularly on the left side.

The foot clonus was easier obtained on the left side. The biceps tendon reflex could be obtained in the upper limbs. The plantar reflex could be obtained only on the right side, the whole foot flexing forcibly. The epigastric, abdominal and cremasteric reflexes could be obtained on the right side only.

The pupils were of medium size, equal on both sides and reacted well to light and accommodation. The corneal and conjunctival reflexes were decreased on the left and absent on the right side. Pain was not felt spontaneously; pressure of the muscles and nerve trunks of the right lower limb caused the patient marked pain; on the left side, pressure on the Vth nerve was quite painful.

The sense of touch, heat and pain was more marked on the right side. On the left side the decrease of these sensations was more marked in the lower limb and in the face than it was in the upper limb.

Examination of the ear showed the presence of otitis media of purulent nature on the left side. On the right side there was a chronic hyperemia of the middle ear (Prof. Geronzi). Ticking of the watch was not heard at any distance.

Reaction to the Galvanic and faradic currents was decreased on both sides supplied by the inferior facial; this diminution was especially marked on the right side.

The retinal vessels were tortuous and congested; this was particularly the case with the upper vessels.

The apex of the right lung was the seat of a cavity.

March 15, 1900. The signs mentioned above remained unchanged, but the muscular force on the left side was now reduced from 50 to 22.

The foot clonus on the left side became more marked than on the right one.

March 22, 1900.—The patient had several convulsive movements during the afternoon. The first three convulsions involved the right arm and leg and the last ones also affected the muscles of the neck and lasted some 2 or 3 seconds.

March 27, 1900.—The clonic convulsions were limited at first to the right limbs, but later became generalized. The frequency of these convulsions decreased latterly and finally disappeared within the last two days. The headaches, however, were more frequent. He vomited frequently, suffered from vertigo when sitting up and was drowsy most of the time; deglutition was intact.

Objective examination.—A binocular examination showed that there was complete paralysis of the right abducens muscles and the left abducens muscle was paretic. The upper left eye lid was still the seat of clonic spasms that raised and lowered it at given inter-

vals; when the lid was not convulsed it was not altogether closed. The paralysis of both VIIth nerves was complete. The tongue protruded incompletely and was deviated to the left side; its right side was slightly atrophied. The muscular force of both upper limbs was decreased. The left hand was claw shaped and the active movements were good. The muscular force in the lower limbs was also decreased. The tendon reflexes of the upper limbs were wanting. The foot clonus was present on both sides, but more marked on the left side. The branches of the Vth nerve on the left side were sensitive to pressure, but no pain was occasioned by the pressure. Vision was considerably impaired. The hearing remained as above noted. The pupils were somewhat contracted, but equal in size and reacted badly to light. Micturition and defecation were normal.

April 3, 1900.—The paresis of the right and left limbs was increased. The knee reflexes were equally exaggerated on both sides. The foot clonus was more marked on the right side. April 6, 1900, the muscles of the left shoulder were animated by clonic convulsions.

April 10, 1900.—The paralysis tended to increase in the upper limbs and they presented anesthesia.

April 15, 1900.—During the last few days he has been having spells of vomiting and clonic convulsions of the lower right limb.

April 16. He complained of suffering from headache and had repeated attacks of vomiting and convulsions in the upper right limb.

April 18. In the afternoon he had severe convulsions of clonic and tonic nature. They began in the left upper limb and extended to the right upper limb and finally involved the right side of the face. He lost consciousness while the convulsions lasted and he foamed at the mouth. The attack lasted eight minutes.

April 22. He again had an attack of vomiting and convulsions in the left upper limb.

April 27. The right abducens muscle was completely paralyzed.

Passive movements were freer on the left side and there was complete anesthesia on the same side. The foot clonus was more marked on the right side.

The patellar reflexes were exaggerated on the right side; on the left side there was intense epileptoid trepidation. The cremasteric reflexes were torpid on the right side and abolished on the left side. The hypogastric reflexes were abolished on both sides. The abdominal reflexes were moderate on the right side and absent on the left side. Vision was present on the left side and abolished on the right side. The left pupil was of medium size and reacted

well to light; the right pupil was contracted and reacted badly to light.

May 2. The right lower limb was the seat of clonic convulsions.

May 13. The right lower limb was more sensitive to pain and the muscular movements in this limb were somewhat stronger. The patient died May 27, 1900.

The left cerebral hemisphere.—A tubercle the size of a cherry was found in the posterior end of the median fronto-parietal convolution; the tubercle passed through the cortical substance and entered the centrum ovale of the same side. Another tubercle of the same size as the one described was located in the posterior end of the lobulus fusiformis. A third tubercle was located in the postero-median part of the lobulus parietalis superior.

The left half of the pons was swollen, its meningeal covering was thickened here and there and the nerves in that locality were involved by the morbid process.

The dura mater in the vicinity of the first and second cervical vertibræ was thickened; this thickening was more marked on the right side.

A frontal section of the pons showed the following: Its entire left half was occupied by a soft, yellow, cheesy substance; this substance was well circumscribed and occupied the whole pars pyramidalis and finally extended to the upper part of the tegmentum.

A section of the petrous portion of the left temporal bone revealed the presence of an abundant mass of creamy pus that extended to the mastoid process; the cells of the latter were destroyed, its external wall was broken and the pus made its way externally.

I first saw the patient about the end of January, 1900. At that time he presented the following nervous troubles: Diplopia, caused by the paralysis of the right abducens, ringing in the right ear, paralysis of the facial and the hypoglossal nerves and weakness of the limbs. On the left side there was analgesia of the Vth nerve, purulent otitis media, blepharospasm, decreased galvanic and faradic excitability of the facial and nocturnal headaches.

Under these conditions, the diagnosis of compression of the base of the pons imposed itself, although it was not easy to decide which side was affected: While the blepharospasm and the analgesia of the Fifth nerve on the left side spoke in favor of there being compression on the pons on the left side, the paralysis of the abducens and of the facial on the right side spoke in favor of a compression on this side. The repetition of the pulmonary hemorrhages and the presence of a cavity in the apex of the right lung, however, made me suspect the presence of chronic tubercular

meningitis at the base of the brain, or of a tubercle about the pons. The presence of the purulent otitis media on the left side was somewhat confusing. Indeed, it was not easy to decide whether the infection had extended from the ear to the pons. According to the patient, the discharge from the left ear set in after the appearance of blepharospasm and the paralysis of the abducens nerve on the left side. According to this account, the supposition of an extension of the purulent process from the ear to the pons should have been excluded. Nevertheless, I did not attach too much importance to the patient's account because it often happens to patients to pass unnoticed a discharge from the ear. Another incident that added to the uncertainty of the diagnosis was the fact that he had had some venereal ulcer three years previously, but the description he gave of its development and sequelæ did not add to the knowledge as to whether it was of syphilitic nature. I had to rely with the diagnosis on the results from antisyphilitic treatment. The inefficaciousness of this treatment made me eliminate the possible presence of syphilitic infection. Then, the gradual development of the general and focal signs, in conjunction with the tubercular infiltration of the right lung convinced me more and more of the presence of a tubercular neoplasm in the pons.

Case VII.—*Tuberculum hemispherii cerebri sinistri.*

T. E., 52 years of age, painter, indulges freely in the use of wine and smokes tobacco to excess. His father died aged 53 years and was subject to gout. The mother died aged 77 years, but the patient does not know of what disease. One brother died aged 45 years, after a protracted illness, that was probably pulmonary tuberculosis; another brother had syphilis and died, aged 44 years, of pulmonary tuberculosis; a third brother, 51 years old, is healthy.

The patient was born at full term, did not have any disease of childhood or convulsions. When 21 years old, he had an operation for a cold abscess of the hip joint. When 25 years of age, he contracted malarial fever that lasted for a period of four months. One year later he had multiple ulcers that were not followed by any skin eruption or nocturnal pains. He has had seven boys. The first died aged six years, of diphtheria; the second one died a few days after birth; the other four are healthy. His wife has not had any abortions. The patient's present disease commenced four months ago; it set in with vague pains in the right hand, forearm and arm as well as in the lower right limb. The pains were followed by slight transitory spasms in the same limbs. Two months later, the patient suddenly had a convulsive attack that lasted some fifteen minutes. It involved the right arm, caused

him pain and was clonic in nature. A few days later the attack was repeated, although it was less intense. The patient then noticed that his right arm was weaker than usual and that he had difficulty in speaking. He then went to the Hospital S. Spirito for medical treatment.

January 13, 1903.—He suffered from intense headaches that were worse in the afternoon and from paresis of the right limbs and the facial nerve. During the first fifteen days after his admission to the hospital he had three convulsive attacks. The following is the description given of the attacks: The attack is preceded by a sensation of formication in the fingers of the right hand; this is rapidly extended to the shoulder. The convulsions of the limb were followed by abrupt convulsions of the trunk of the body that rotated towards the right. To this was added a series of convulsions of the diaphragm that caused a depression in the epigastric region. During this attack the patient retained consciousness and he complained of the pain the convulsions were causing him. He did not foam at the mouth or lose the urine. He was then put on iodide treatment.

January 21, 1903.—The eye balls presented nothing abnormal. The right inferior facial nerve presented hypotonia. The movements of the tongue were normal and there was no disturbance of articulation. There was no motor disturbance in the left limbs. The left upper limb was somewhat more resistant than normal to passive movements. The lower left limb presented a slight diminution of muscular force. The right upper limb was in a position of slight adduction and the limbs were fixed at times. Resistance to passive movements was more than normal. Active movements could be executed, but they were slow at times. Muscular force was impaired. In the lower right limb the muscular force was also decreased. The tendon reflexes of the upper limbs were absent on both sides. The knee reflex was normal on the left side, but almost absent on the right one. The patient complained of suffering from headaches that affected the vertex, forehead or temples. Cranial percussion did not cause any pain, even when performed on the left side. Pressure of the trunks of the peripheral nerves was not painful. The sense of cold, heat and pain were perceived better on the right than on the left side. Vision and hearing did not present any alterations. The psychic condition was good. There was no vomiting. The pulse was normal. There was no disturbance of sight and there was no vertigo.

A few days later the patient had another attack of Jacksonian epilepsy, similar to the preceding one. Regardless of the anti-syphilitic treatment the paresis on the right side remained un-

changed. The headaches persisted and the mental obtusion and marasmus were accentuated. He had no fever at any time during his stay in the hospital. He died February 6, 1903.

AUTOPSY.—February 7, 1903.—In the left hemisphere was found a tubercle, the size of an ordinary tree knot; this was situated in the area of the upper and middle parts of both Rolandic convolutions. Another tubercle of about the same size was situated in the middle of the left occipital lobe. A much smaller sized tubercle was situated in the middle of the posterior part of the vermis superior. Besides this was found a tubercular epididymitis.

Recapitulation.—The patient's son and brother were tubercular; the patient himself had had a cold abscess of the right hip joint. At the age of 52, he became subject to headaches that were more marked at night, and suffered from Jacksonian convulsive attacks. Paresthesia extended from the hand to the right shoulder and was followed first by clonic spasms and then by paresis of the same limb. Then followed marasmus and death. At the autopsy were found three tubercles. One of these was located in the middle of the left Rolandic convolution, another was found in the middle of the left occipital lobe and the third was found in the posterior part of the vermis superior. The mental condition of the patient was not favorable to a precise examination of his visual field. The statements of the patient himself never led to any suspicion of his being affected with hemianopsia. Consequently, the presence of the tubercle in the occipital lobe was not suspected. The tubercle of the postero-superior vermis was likewise unsuspected. Mention of similar lesions is made by some authors. My attention was mainly called to the Jacksonian convulsions of the right arm in conjunction with the paresis of the same limb. From a clinical standpoint the seat of lesion was located in the middle of the left pararolandic convolutions. However, it was difficult to decide on the nature of the morbid process; although it was learned from the history of the patient that he had suffered from a cold abscess of the hip joint, it did not seem quite logical to conclude that the motor disturbances were due to a tubercular process in the brain. Unfortunately also an examination of the testicles during life was omitted; a timely discovery of a tubercular epididymitis might have helped make an accurate diagnosis of the disease. As it was, however, the advanced age of the patient, the seat of the trouble, the rather rapid development of the syndrome, the absence of fever during the entire course of the disease, the absence of meningeal symptoms (even cranial percussion was almost painless) and all the accompanying details perplexed me in the matter of making

a diagnosis: the presence of an incipient tumor seemed little probable because of the absence of vomiting as well as of papillary stasis.

The nocturnal nature of the pains inclined me to suspect that the trouble was of syphilitic nature (syphilitic arteritis of the cerebral branches of the Sylvian artery). I abandoned this supposition only after the antisyphilitic treatment proved inefficacious, although I had not substituted any positive diagnosis instead.

I make the conclusions from the studies of the cases above cited in a tabulated form, giving the differential diagnoses between the following diseases: Syphilitic and tubercular meningitis of the base of the brain and tumors of the base of the brain, especially of the middle fossa.

MENINGITIS BASILARIS TUBERCULARIS CHRONICA.	MENINGITIS BASILARIS LUEITICA.	TUMORS OF THE BASE OF THE BRAIN.
Age of Childhood.	After the age of from 20 to 30 years.	At any age.
Hereditary predisposition. Presence of other tubercular affections.	Presence of other syphilitic manifestations. In women — abortions.	Manifestations of neoplasms in other parts of the body.
Febrile temperature (38 to 39 degrees C., or more). Rigidity of the muscles of the neck.	Temperature normal or about 38 degrees C. Rigidity of the muscles of the neck is rare.	Absence of fever.
Mental obtusion quite marked.	Between the spells of somnolence and coma there are periods of lucidity.	
Meningitic symptoms precede signs of paralysis.	Rapid development of paralysis of the cranial nerves.	
_____	_____	Optic neuritis rapidly reached a marked degree.
Headache at any time.	Headache is preferably nocturnal.	_____

While I am giving this tabulated form of criteria I wish to remark that they cannot be considered as being absolute guides in the matter of making the diagnosis in question. Indeed, the study

of my cases above cited confirm this statement. Thus, while chronic tubercular meningitis is most apt to take place during the age of childhood, it is also apt to occur during adult age. This fact was demonstrated in my cases marked VI and VII. The first of these cases was one 19 years of age and the second one was of 30 years of age.

Little importance should be attached to the elevation of temperature, because it may exist in conjunction with syphilitic basal meningitis as well as with that of chronic tubercular meningitis. On the other hand, cerebral tuberculosis may run its course without there being any fever. This was illustrated in case VII.

The symptoms.—In the cases VI and VII rigidity of the neck was absent, although rigidity is said to be characteristic of tubercular affections. In the first three cases that presented syphilis of the base of the brain the symptom of muscular rigidity of the neck was absent. Again, although in basal meningitis the meningeal signs should precede those of paralysis, we have seen a reversal of this in case V: In this case of chronic tubercular meningitis of the crus cerebral ptosis was the first manifestation of the disease and headache set in later on. Similarly, in case VII, the first symptom that attracted the patient's attention was the amblyopia and diplopia, while the headache came on later and was more marked in the afternoon. According to the French clinicians, especially Fournier, this postmeridian exacerbation of the headache is characteristic of syphilitic infection. Yet, it is quite clear that case VI presented chronic tubercular meningitis, but his headache was more marked at night. On the other hand, case I, that presented syphilitic basal meningitis, suffered from headache in an equal degree by day and night. Finally, case I (syphilitic basal meningitis) rapidly developed a grave papillitis hardly two months after the onset of the disease, while some authors consider such a precocious development of symptoms as being pathognomonic of tumors of the base of the brain.

Although the criteria enumerated in the table are not infallible they represent the features of the respective diseases in a general way.

In my cases of cerebral tuberculosis, tubercular heredity was present in all. Indeed, the mother of the patient designated as case V died of pulmonary tuberculosis and cases VI and VII had tubercular relatives. Much importance should also be attached to the presence of tubercular affections of other organs. Of course, the presence of such affections should not be taken as an absolute criterion of the cerebral affection, for tuberculosis and syphilis may coexist in the same patient. At any rate, it is a

fact that in my three cases of cerebral tuberculosis other organs were also affected with tuberculosis. Thus, in case V, I found tubercular infiltration of the pulmonary apex, case VI had pulmonary hemorrhages and night sweats that had preceded the manifestations of the tubercular infection of the pons, and case VII presented a tubercular epididymitis. The old saying "*Sed oportet alia signa contemplari*" seems to be quite applicable here.

Looking back at the cases cited above it becomes evident that in cases of cerebral affections it is quite important to examine besides the brain manifestations, all the other organs of the body. This lesson was taught particularly in case V: the patient did not complain of having any trouble in her chest, and the diagnosis in case VII would have been less obscure had his testicles been examined. Finally, in the cases I, II and III (syphilitic neuritis or basal meningitis) no psychic disturbances were observed, while in cases V and VI (cerebral and meningitic tuberculosis of the crus cerebri) somnolence and mental obtusion set in at an early date.

The conclusions to be drawn from the study of these cases are as follows: In cases of incipient affection of the base of the brain with uncertainty of their etiology, tubercular infection may be decided on if there are present *tubercular heredity, tubercular affection of other organs besides the brain and an early involvement of the mental faculties*. However, there are some cases the diagnosis of which cannot be made until their course has been observed and the effect of antisyphilitic treatment tried. The history given by the patient is often uncertain, tubercular affections of other parts of the body may remain latent and mental disturbances even in connection with tubercular basal meningitis may not appear until late in the course of the disease. Thus, in cases I and II the nature of the syphilitic symptoms that simulated those generally found in connection with a basal tumor could be determined only after antisyphilitic treatment had been given to the patient for some length of time. On the other hand, papillary stasis, vertigo, disturbance of the pulse, cephalalgia and mental confusion may be absent for a long period of time in cases of basal tumor, as was seen in case IV; yet these are the signs that would point to the presence of a tumor in the middle fossa.

The following is a case in point.

Case VIII.—*Meningitis basilarisluetica hereditaria, or tuberculosis basilaris chronica arreste?*

P. E., 8 years of age. The father is suspected of having syphilis. The mother has had seven children, one of whom died of some throat disease. The other children are healthy. The

patient is the youngest of the children. At four years of age the patient had a small tumor of the forehead that was removed by a surgeon. The nature of that tumor is unknown. The patient then suffered from glandular swelling of the neck that disappeared eventually, while the child was treated with cod-liver-oil (scrofula?). After this incident he enjoyed good health until four months ago. He began to suffer from pain in the teeth on the right side. The teeth became decayed and all fell out on that side. To this was added a headache that was more marked in the evening. Within the last month, he became subject to severe vomiting and occasional profuse diarrhea. He did not have any vertigo, convulsions or epileptic attacks. Finally, 20 days ago, he manifested diplopia. He could not see clearly with the right eye when it was turned to the right and outwardly. He had ringing in the left ear. These symptoms gradually increased, but he had no treatment for his trouble. His mental condition was good.

Objective examination September 30, 1902.—Both eyes, especially the right one, are permanently turned inwards. A binocular examination shows that the outward rotation of the eye balls is incomplete; monocular examination shows the same condition.

When looking upward and outward the patient sees objects double. The false image is on the right side. The superior and inferior VIIth nerve were insufficient on the left side. He could whistle well and the movements of the tongue were normal.

Upper limbs.—The active and passive movements are normal on both sides, except for an augmented tonicity on the left side; the muscular force is also diminished on the left side.

The lower limbs.—Active and passive movements are normal. Locomotion is good, but the muscular force is decreased on the left side. There is no articular disturbance and micturition and defecation is normal.

Reflexes.—All the reflexes—tendon, cremasteric and epigastric—are abolished. The pupils are slightly dilated, especially on the left side and the reaction to light is almost completely abolished.

The sensibility to touch, heat and pain is diminished on the left side. Compression of the right supraorbital nerves is painful. Cranial percussion is painful on the left side.

The sense of smell is in better condition on the left side. Galton's whistle is heard better on the right side. The ticking of a watch is heard at a distance of 50/100 on both sides.

Vision of the right eye is $1/4$ and in the left eye $6/8$. Colors are seen equally well with both eyes.

The sense of taste is normal. The pulse is 96 per minute. The axillary temperature is 36.6 degrees C.

Ophthalmoscopic examination.—The right eye presents papillary stasis with hemorrhage in the centre of the papilla. In the left eye there is incipient papillitis.

November 19.—The focal symptoms remained unchanged, the vomiting increased in frequency, and the patient was put on iodide treatment. Mercurial treatment was added later on.

December 4, 1902.—The patient improved somewhat under the mixed treatment: the vision in the right eye was now equal to that in the left one and the headache and vomiting had disappeared.

The right abducens muscle was also considerably improved, while that on the left side remained unchanged. The pupils remained as noted above. Percussion of the parietal region was still painful. The temperature was still normal. The pulse varied between 96 and 120 beats per minute and the respirations varied between 24-28 per minute.

Thus, we are dealing with a patient 8 years of age, who has no hereditary history and is free from hereditary syphilitic stigmata. When 4 years of age he twice presented glandular swelling. A few months ago he began to vomit and to suffer from frontal headache that was worse at night; he also had ringing in the left ear and right amblyopia. An objective examination revealed the presence of paresis of the abducens and the seventh nerves on the left side, impairment of the sense of smell, abolished pupillary reaction to light, abolished knee reflexes, impaired muscular motility, hypoaesthesia and amblyopia associated with papillary stasis and cranial pain on percussion on the left side.

All these disturbances, save the paresis of the right abducens muscle and the sensitiveness to cranial percussion, remained unchanged; all the other symptoms disappeared under the mixed antisyphilitic treatment.

It seems easy to exclude the supposition of the presence of a basal neoplasm because the greater part of the symptoms had disappeared under the antisyphilitic treatment. Yet some authors claim that temporary absorption of cerebral neoplasms is possible when mercurial treatment is administered for some length of time. The facts that speak against the presence of a tubercular process are: The absence of fever, the integrity of the mental condition, the absence of tubercular processes in the other organs of the body, the disappearance of some symptoms and the improvement of other symptoms under mercurial and iodide treatment. It must be borne in mind, however, that the patient had had glandular engorgement and tubercular outbreaks. Finally, if we suppose that the disease is of syphilitic nature, the question arises why are the

stigmata of hereditary syphilis absent and why have some of the symptoms resisted the antisyphilitic treatment.

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THE MENTAL STATUS IN CONNECTION WITH CEREBRAL TUMORS.*

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In making a study of cerebral tumors one is tempted to classify the mental disturbances that accompany them. The idea suggests itself to classify these psychic troubles into constant,—proper to all cerebral tumors and variable,—depending on the cerebral region affected by the tumor, the depth of its situation, its volume, nature and the more or less marked degree of its malignity.

The literature on this subject shows, however, that the knowledge of these psychic disturbances is not sufficiently advanced to allow of a grouping as outlined above and that such a grouping would be premature. One single example cited below will show that the frontal lobe is considered by some as being most tolerant to the presence of tumors while others claim that a tumor in this region causes the most varied and intense psychic disturbances.

In some cases, psychic disturbances are the only manifestations that accompany cerebral tumors, while in others, on the contrary, these are accompanied by signs common to tumors properly speaking.

I shall consider in this paper whether the psychic disturbances manifested during the course of cerebral tumors are sufficiently typical to point towards the presence of these growths, whether the nature of the psychic disturbances is characteristic of the presence of cerebral tumors and finally I shall endeavor to present a pathogenetic classification of these psychic troubles.

I shall first consider the frequency of impairment of intelligence and of change of nature described in connection with cerebral tumors.

According to the statistical studies of Ball and Krishaber (1), disturbances of the intellect in connection with cerebral tumors are observed in half of the cases (86 times out of 185) and delusional manifestations are observed in one out of twelve cases (15 out of 185 cases); whereas insanity is far less frequent (10 out of 276 cases).

In many other cases it was observed that disturbances of the intellect were the earliest manifestations in connection with cere-

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bral tumors. Recently, Brault and Loeper (2) described a psychoparalytic form manifested during the course of cerebral tumors, the psychic manifestations of which appear first. The clinical reality of these manifestations has been confirmed by Devic and Gauthier (3), Lannois and Porot (4) and others. In some cases the impairment of the intellect is the only pathological manifestation observed. Oppenheim (5) describes cases in which the psychic trouble was the only manifestation during the course of cerebral tumors. In one of his own cases melancholia was the dominating feature and in Walenberg's case the main clinical feature was acute hallucinatory delirium.

Whether the psychic disturbances are the sole manifestations or exist only during a certain period of the course of the cerebral tumor, it is interesting to know to what extent these disturbances are pathognomonic of cerebral tumors.

The modifications in the intellectual sphere may range between simple mental laziness and dementia. According to Ball (1), some patients fall into a particular condition of stupor, become indifferent to their surroundings as well as to their own conditions.

According to Brissaud (6), the above mentioned condition of stupor is the result of the pain caused by the tumor, but this is not always the case. Describing this condition, he says: "The patient holds his head between his hands, does not speak, refuses to answer questions, remains in bed or in his armchair, remains unfed unless he is made to eat, and he is uncleanly. When called by his name he comes out of his stupor, only to lapse back into it."

A tendency to drowsiness is often observed in connection with the diminution of psychic activity above described: When they do not suffer these patients sleep. At times their mental faculties are affected *quantitatively*. Memory is most frequently the first to suffer, its impairment following the usual course: Difficulty in recalling proper names, recent events, etc. According to Peytavy (7), the memory alone is often affected, while the intelligence remains intact. The affective sentiments are not generally impaired (Brault and Loeper).

Most frequently, however, dementia is complete and is characterized by absolute indifference to surroundings. The patient seems to be plunged in thought without any process of thought taking place in his mind. He is unconscious of his condition, lets himself be guided as if he were a child and is incapable of any intellectual effort or initiative.

Dupré and Devaux (8) particularly call attention to the nature of this impaired intelligence that they term *psychic puerilism* and lay much stress on its diagnostic importance. They give a de-

tailed description of this childish nature of these patients' psychic conditions, the puerile psychic reactions in their answers, intonations, mimicry, the objects of their pre-occupations and in the nature of their desires. The above mentioned authors say: "These patients manifest reactions of impatience and futile obstinacy in their motives, they are naive in their expressions and disproportionate in their intensity."

Besides the indifference mentioned above all kinds of impairment of nature have been observed, preceding, accompanying or following the impairment of the intellect: Emotivity, irritability, aboulia, spells of tears and anger, of gaiety and of euphoria. According to Ball (1), the irritability of these patients is most characteristic: "Some of them answer by rude invectives and show their anger towards any person who comes to their bedside." He lays particular stress on this characteristic when explaining the differentiation of diagnosis between mental disturbances accompanying cerebral tumors and those accompanying cerebral softening. He says that cerebral softening produces dementia with a tendency to laughter and tears, whereas in cases of cerebral tumors "if a change of character exists it manifests itself by extreme irritability rather than by affective phases."

Brissaud does not speak of any special disturbances of character. He simply remarks that if the memory becomes impaired and the intelligence obscured,—the nature remains the same; the patient is simply in a condition of childishness less the vivacity of impressionability and curiosity.

In other cases various disturbances of character are reported alongside with the indifference, irritability, mental depression, suspicion, violent impulses, euphoria or absolute mental torpor.

Besides these demential conditions may also develop delusional ideas of persecution, suicide and various hallucinations. Scavic (9) reported a case of delirium of persecution in a man afflicted with a psammo-sarcoma of the brain. Jastrowitz (10) and Bruns have described a variety of reasoning mania or *moria* that they consider as being characteristic of neoplasms of the frontal lobe.

Rayet (11) has observed impulsive phenomena in connection with a cerebral tumor in a girl, nine years old.

Automatic ambulatory spells have been observed in various cases by Devic and Gauthier and Devic and Courmont (3).

Of all these impairments of the intelligence, however, more or less complete dementia is the most common manifestation. It sets in insidiously and develops slowly and progressively, but may have a rapid course, as in Raymond's case (13), in which it was fully developed after a period of four months.

In their interesting memoir on the psychoparalytic form of cerebral tumors Brault and Loeper particularly call attention to the frequency of dementia in such cases. They say: "The patients are more frequently demented than delusional." The authors conclude that the delusions are accidental and transitory manifestations.

The last statements are important from the pathogenetic standpoint of the disturbances.

I agree with the last mentioned authors that the various psychic disturbances are of no pathogomonic significance and do not differ from similar manifestations in other cerebral lesions. It is impossible to diagnose a cerebral tumor on the ground of the mental manifestations alone. One often finds cases in which the tumors were not diagnosed and the disturbances were ascribed to general paralysis, neurasthenia (Levillian), hysteria, epilepsy (Ollivier), cerebral arteritis, cerebral softening, senile dementia (Hitzig), lead poisoning, uremia, etc.

Recently, Lugaro (14) published an interesting case illustrative of the difficulties that attend this diagnosis. The case was one of uremic syndrome that simulated a tumor of the frontal lobe; there were diffuse symptoms of cerebral tumors and psychic disturbances.

Reynolds (15) has also pointed out the difficulty in making a diagnosis of cerebral tumors, saying that they are apt to be confounded with uremia, lead poisoning, senile dementia and even chlorosis.

The disturbances of the intelligence and character that accompany cerebral tumors are not, therefore, characteristic of their presence and cannot be considered as criteria in making the diagnosis.

It is interesting to consider whether the psychic disturbances that coincide with the general symptoms of cerebral tumors (cephalgia, vomiting, papillary edema, etc.) are helpful in localizing the seat of the tumors.

Such a localization would be possible if tumors of a given cerebral region only were accompanied by psychic changes, or else if the psychic disturbances that accompany cerebral tumors had a characteristic stamp.

I shall examine both cases above outlined, excluding, however, the various disturbances of speech; motor or sensory aphasia caused by destruction of the respective centres, verbal deafness and blindness, agraphia and motor aphasia. Aphasias do not, in themselves, constitute changes of intelligence as they are considered in this paper. When the aphasias exist they only com-

plicate the mental status and are valuable adjuncts in localizing a tumor, just as a monoplegia would be.

The localization of the psychic function in the frontal lobes generally admitted according to the physiological experiments by Horsley and confirmed by a certain number of clinical facts, would lead one to believe that tumors of the frontal lobes only should be accompanied by psychic disturbances.

Besides the cases of Grasset, Brissaud, Auvray, Raymond, Dupré and others, however, in which the psychic disturbances were accompanied by tumors of the frontal lobes, there are numerous other cases in which tumors of the frontal lobes existed without causing any disturbance.

Thus, Byron Bramwell (16) found marked psychic disturbances in 11 cases of tumors of the frontal lobes, Giess (17) found marked impairment of intelligence in 11 cases out of 13 affected with tumors of the corpus callosum, Ramson (18) observed dementia caused by tumors of the corpus callosum in 11 cases out of 11 instances; finally, in the report of their case of a tumor of the corpus callosum Devic and Paviot (19) insist on the frequency and importance of the presence of mental disturbances that may simulate neurasthenia, general paralysis and dementia.

Finally, there are many observations on record showing that tumors of other cerebral regions may be accompanied by mental disturbances similar to those described above. Such disturbances are so common that Brault and Loeper claim that psychic disturbances are most frequent accompaniments of central neoplasms located in the psychomotor zones.

Tumors of the other centres of association (Island of Reil, region situated behind the motor and in front of the visual sphere) of the psychomotor zone are, then, apt to be accompanied by mental disturbances.

It remains to be considered whether the mental disturbances caused by cerebral tumors are in any way characteristic according to the region involved by the tumor.

Numerous authors have held positive views on this subject. Ladame (20) has attempted to classify the mental disturbances according to the region involved. Thus, he claims that tumors of the posterior lobes are accompanied by mental depression while tumors of the convexity of the hemispheres are accompanied by mental excitation (acute mania, fixed ideas of grandeur).

Ball and Krishaber do not divide the last mentioned views.

Leonora Welt (21) found, in her 8 cases of tumors of the frontal lobes, only a change of character. The patients were at various times sombre, suspicious, taciturn, irritable and violent.

Obici (22) also claims that there are special changes of the character and intelligence in cases of neoplasms of the frontal lobes.

Jastrowitch, on the contrary, claims that the pathognomonic feature of tumors of the frontal lobes is a variety of reasoning mania or "moria" characterized by joviality of spirit and humoristic condition of the patients thus affected.

Oppenheim also considered "Witzel Sucht" as a special and pathognomonic feature of tumors of the frontal region.

In conclusion it may be said that an enormous diversity of psychic symptoms has been described in connection with tumors of the frontal lobes, covering all forms of intellectual enfeeblement with mental depression, obnubilation or more or less complete dementia of a more or less rapid development accompanied by euphoria (Cestan's case, 23) and psychic childishness (Dupré).

The mental symptoms accompanying tumors of the corpus callosum similarly lack in characteristic traits. Ramson insists on the importance of the changes of the intelligence characterized by gradual but marked mental impairment. He says that this modification may simulate, in its acute form, stupor following an apoplectic spell, and in its chronic form that of insanity with hallucinations or of mania with irritability. Devic and Pivot say that these mental troubles may simulate those found in general paralysis and in dementia.

The presence of a tumor in a given cerebral region cannot, in reality, explain the appearance of psychic disturbances. The tolerance of the brain to the presence of foreign bodies and certain tumors is well known. Numerous cases of cerebral tumors of various regions are recorded in which no psychic or mental symptoms were manifested. Ball reports a case of multiple cerebral tumors involving various regions that was not diagnosed during life and that was not characterized by any mental symptoms. Two of the tumors were of the size of a nut and were situated in the cerebellum, and two were situated in the hemispheres,—one in each, in the vicinity of the corpus striatum. The same author quotes Abercrombie's case of a young girl in which the whole left hemisphere was softened, but no mental disturbances were manifested and the motility and sensibility were intact.

A certain number of analogous cases are reported in the *Bulletin de la Société Anatomique* and I have myself published a case of a voluminous glioma involving the sphenoidal and the frontal lobes that during a long period of years did not manifest any impairment of intelligence and was characterized only by epileptoid spells that were considered as being of the essential type.

One can easily understand such cases: Psychic disturbances, indeed, cannot be caused by alterations in a limited zone of the cerebral cortex or substance.

There is no particular cerebral region where the intelligence is manufactured. A given destructive lesion may cause paralysis, disturbances of speech or of the process of ideation.

The function of normal intelligence, however, necessitates the coöperation of all the constituent cerebral parts. Consequently a diffuse alteration of the cerebral cortex alone could be instrumental in causing a general modification of the intelligence expressed by obnubilation, mental confusion or by dementia.

Desault must have considered the question in this light when he said: "Cerebral lesions cannot produce these symptoms unless they are accompanied by congestion and inflammation in areas they affect."

Several pathogenetic theories have been advanced since and all tend to explain the appearance of the psychic disturbance by a generalized involvement of the cortex consequent to the presence of the tumor. Thus, among the incriminated conditions are compression, reflex irritation, auto-intoxication and auto-infection.

However, in order to simplify the question it would be useful to divide the mental symptoms into several groups.

In the first group I shall place symptoms of intellectual obtusion, stupor and dementia and in the second,—the more acute symptoms: Hallucinations and hallucinatory delirium and, finally, in a third group I shall place certain deliriums that, by their evolution and course, seem to be simply coincident with the other trouble.

According to Openheim, torpor and obnubilation are simple manifestations due to augmented compression caused by intracranial hypertension. Whether this compression is due to the size of the tumor or, most frequently, the augmented quantity of the cerebral fluid it is independent of the seat of the tumor.

This torpor, accompanied by delay in mental conceptions, impaired ideation and a tendency to somnolence may be met with under other conditions due to the same cause, as is uremia, for instance. Babinski (25), in his report of a case of cranial trephining for the purpose of relieving intracranial tension of the fluid, makes a comparison of the resemblance between the clinical features in cerebral tumors and in uremia. Marie and Guillain (26), discussing the utility of lumbar punctures for the relief of uremic cephalalgia, lay much stress on the hypertension of the cerebro-spinal fluid. This pathogenesis is generally accepted.

The ameliorations following surgical intervention as reported

by Devic and Courmont, Reen (27), Beevor and Balance (28), Jaboulay and others can thus be explained.

Jaboulay's case is most instructive. It relates to a little girl who suffered from a tubercle of the right frontal lobe and whose mental condition was improved by the trephining alone, without removal of the tumor.

Maurice Auvray (30) reports numerous cases in which the mental conditions of the patients were improved after surgical intervention and these facts may probably be explained as above stated.

Klippel (31) admits that general compression is accompanied by a subinflammatory condition, by phlogosis, by exudation about the meninges and even by ventricular granulation. This chronic inflammation of the meninges may be followed by disappearance of Exner's fibres and cause dementia.

In his description of a case of neuroglioma that rapidly caused dementia Raymond (13) made mention of the disappearance of the tangential fibres.

He particularly points out that the destructive action of the tumor was relatively slight in extent whereas the association fibres were degenerated in all their extent in the cerebral cortex, except in the motor zone.

He incriminates compression as being the cause of the disappearance of Exner's fibres. He justifies this statement by the fact that the degree of the lesion was more marked on the upper surface of the convolutions, that is to say, at the points where the brain leans directly against the cranium. He concludes his arguments as follows: "I think I may justly claim that compression firstly causes impairment of function of the Exner fibres and then brings about their destruction, while the other cortical elements still remain intact."

Whatever the rôle of compression may be, there are also other factors that are apt to destroy the association fibres and bring about subsequent dementia. Joffroy and Gonibault (31) reported a case of progressive or adherent meningitis with psychic symptoms in a subject that for thirty years had suffered from a tumor of the cerebellum. The autopsy revealed the presence of thickening and generalized edema of the meninges. Histologically it was found that the meningeal membranes were the seats of chronic diffuse inflammation; in the cerebral cortex there was congestion, inflammation and a scarceness of the association fibres. The nervous cells seemed to be normal numerically, as to volume and form; their prolongations were not abundant and the chromatic granulation was rare even in the giant cells.

The signs of chronic diffuse meningitis simplify the explanation of the disturbances of the intelligence and character.

The pathogenesis of this meningitis is interesting and the authors ask whether it had not developed as a consequence of the presence of the tumor that acted as a thorn thrust into the brain and as a source of infection of common nature.

Dupré and Devaux (8) propose another pathogenic explanation of the symptoms accompanying cerebral tumors, especially of the psychic symptoms. Besides the mechanical factors they also incriminate the toxic agents: Impregnation of the cerebral matter with the products of unassimilated matter, and the cellular toxins thrown out by the neoplasm into the venous and lymphatic circulation of the brain.

They support this pathogenetic hypothesis by clinical, physiological and histological arguments, of which the following are the most important: The analogy of the clinical features of uremic and neoplastic encephalopathias, the rôle of elimination of the toxic products of neoplastic nature through the cerebral circulation, cellular and pericellular alterations characteristic of a toxi-infectious brain even in regions distant from the tumor and, finally, the special neuritic symptoms in the optic tracts.

They call attention, besides, to the case published by Sérieux and Mignot (32) in which multiple hydatid cysts, disseminated in the cortex, brought about sensory, hallucinatory, epileptic and delusional manifestations. Pierre Marie suggests that the psychic disturbances were due not to the localization of the lesion, but to the action of the secreted toxins on the brain.

This toxic pathogenesis helps to understand more clearly the hallucinatory and delusional symptoms that take place during the course of cerebral tumors.

In his work on cerebral tumors, Klippel (33) is still more explicit on this subject, adding to the theory of autointoxication that of autoinfection. He says: "At times there is more than simply autointoxication by the products of the tumor; there may also be secondary cerebral infection, acute secondary infection developed around the tumor, causing a maximum inflammatory lesion there." It is a common clinical observation to see a patient with a diagnosed cerebral tumor, live for months or years and "suddenly be taken with convulsions, delusions and fever; death may shortly follow, the autopsy revealing not only a tumor, but also an acute inflammation around it, the meninges and the ventricles being the seats of cloudy exudates of inflammatory, if not suppurative nature; there may also be found hemorrhagic and hyperhemic condition in distant parts." Such acute lesions speak in favor of a

rapid infection being added to a chronic disease. He adds, further on, that headaches, convulsions, fever, delirium and coma are signs of a kind belonging to acute cerebral infection.

We should, consequently, ascribe the delusional complications of cerebral tumors to superadded infections and to autointoxications.

While dementia may be due, at times, to cerebral compression, it may also be due to autoinfection of chronic evolution. If the meningoencephalitis thus produced is diffuse it may correspond to the clinical features of general paralysis.

We may group the psychic symptoms accompanying cerebral tumors according to the above mentioned pathogenetic facts.

Impaired ideation, obtundation of the intelligence and mental torpor, when not due to the intensity of the pain, as remarked by Brissaud, are produced by cerebral compression, either by reason of the size of the tumor or by hypertension of the cerebro-spinal fluid.

Similar symptoms are observed in uremia and are relieved by lumbar puncture or trephining. These facts explain the amelioration caused in such cases by surgical interference.

Dementia may be caused by several causes: The disappearance of the association fibres may be due to compression, to diffuse meningitis caused by irritation, to toxic or infectious meningitis or chronic encephalitis.

This dementia may serve as a substratum for ill systematized ideas of persecution or vague suicidal ideas, periods of excitation or depression, disturbances of character that are found in all cases with circumscribed cerebral lesions, the pathogenesis of which is the disintegration of the intelligence itself. Indifference, absolute torpor and egotism that are found in numerous cases (Cestan's case) are symptoms frequently met with during the course of chronic meningo-encephalitis.

Acute hallucinatory spells accompanied by fever are due to autotoxic or autoinfectious complications. These delirious phenomena are only accidental and transitory, as Brault and Loeper have remarked.

Finally, when true psychoses take place and coexist with cerebral tumors there is every reason to believe, with Ball, that they are simple coincidences.

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A EULOGY ON BAILLARGER.

The eulogy on Baillarger read by Dr. Magnan at the French Academy of Medicine is instructive in its contents as well as inspiring in its sentiment. It presents Baillarger not only as an untiring and original worker in the science of psychiatry, well familiar to the medical profession, but also alludes to his private life, which was full of tender sentiment and good will to his fellow-workers.

Baillarger (Jules-Gabriel-François) was born March 26, 1809, and died December 31, 1890. His life was one of the most fruitful in the history of psychiatry. He was one of the first physicians to delve into the physiology, psychology and pathology of the insane. His works contain in embryo some of the latest discoveries perfected by masters of our own day, such as psychic and

psycho-sensoriel hallucinations, the mechanism of the hypnogogic hallucinations and cerebral automatism and its relation to the superior cerebral centres. Some of the stuporous melancholiacs were classed by Pinel as idiots, by Esquirol as demented and Georget called the disease *stupidity*, and said that it was characterized by accidental suspension of mental manifestation. Baillarger showed analytically that these patients were neither idiots nor demented and that they did not suffer from complete suspension of intelligence, but that behind their apparent torpor was masked a most active delirium characterized by delusions and terrifying hallucinations apt to lead the subject to suddenly commit dangerous acts. He called this form of disease melancholia with stupor and read a paper on the subject at the French Academy of Medicine. He similarly simplified the notion of the disease that he called *folie à double forme*. Falret designated it by the term *folie circulaire*, but the disease was essentially the same and numerous contributions to the study of periodicity and intermittance of the affection resulted from the first contributions. Baillarger was the first to present us with a systematic study of general paralysis. He pointed out the two important syndromes of the disease,—inequality of the pupils and hypochondriacal delirium. This indication was of great importance at that time, when it was believed that delirium of grandeur only was the characteristic mental aberration in general paralysis. He then indicated the form of general paralysis accompanied with locomotor ataxia and pointed out the presence of sclerosis of the white cerebral matter—a necessary complement of the anatomical pathology of the disease. He observed that the delirium disappeared during remissions, but that the intellect remained impaired and he concluded that the affection was of a dual form—paralytic dementia and paralytic insanity. If these notions are not accepted to-day, they have led us on to the discovery of the true condition in this affection—that the essential accompaniments of the disease (mental enfeeblement and clipping of words) are due to the diffuse encephalitis, whereas the delirium changes in form with the individual tendencies and predisposition. Regardless of the polymorphism of these delusions they all belong to the same family—they are all built on a basis of dementia. Baillarger further made a careful study of cretinism and idiocy, separated one from the other, and demonstrated that idiocy was prevalent in the Departments of France where alcoholic abuses were in vogue. He further presented one of the most complete descriptions of goitre in animals in localities where this affection is endemic. Dogs and horses were particularly subject to the disease and it appeared in a special form in mules.

Besides the scientific work properly speaking, Baillarger started a crusade against the application of the straight jacket to patients with febrile delirium in the general hospitals. His splendid works are collected in two volumes entitled *Recherches sur les maladies mentales*, treating of the anatomy and physiology of the nervous system, its psychology and pathology, mental clinic, therapeutics and legal medicine.

Baillarger was the founder of the Medico-Psychological Society of Paris and of its official publication, *Annales Medico-psychologiques*. He aimed not only at leading a fruitful life himself, but also tried to engage every psychiatrist in furthering the progress of the science. He also founded the *Association des medecins alienistes de France*. Besides his professional genius and public charities, Baillarger was a tender hearted man and many are the private donations that came from him.

During the cholera epidemic of 1849, the disease was ravaging the population in the Salpêtrière and a general panic prevailed there. In order to keep up the courage of that community, he had a room fitted up for himself at the hospital and resided there while the epidemic lasted. When Trélat, Sr., fell ill with the dread disease, the patient was transported by force to Baillarger's private sanitarium. In 1865, during the cholera epidemic at the Salpêtrière, Dr. Mangan, who was Baillarger's interne, fell ill with alarming symptoms of the disease. The patient was also forcibly removed to Baillarger's own home, where he was nursed by Mme. Baillarger herself.

Such was the life of the great French alienist whose time was spent at the bedside of the insane and in the laboratory.

MULTIPLE NEURITIS AND THE PSYCHOSES.

As early as 1886, a short time before the appearance of Korsakoff's first paper, at a meeting of the Philadelphia Neurological Society, in a discussion of a paper by Dr. E. C. Seguin on tropical beriberi, Dr. Mills called attention to the concurrence of spinal and cerebral symptoms in cases of multiple neuritis (*Medical News*, Dec. 18, 1886). He spoke of these cases, probably in part incorrectly, as instances of the concurrence of myelitis and encephalitis with neuritis. Usually the cerebral condition in the so-called polyneuritic psychoses is a toxemia rather than an inflammation. In this communication reference was made to two cases seen in consultation. In one of these cases, a woman, the patient

presented all the typical marks of multiple neuritis, and positive evidences of cerebral involvement in mental confusion with delusions and hallucinations of sight and hearing. In this case the history was clear not only of alcoholism, but also of the use of opium, chloral and other narcotics. In another case, also seen in consultation, with a history of the use of tobacco and alcohol at intervals, and with a recent record of acute rheumatism and cardiac disease, the patient's sight had failed until he had scarcely more than the perception of light in both eyes, although ophthalmoscopic examination showed nothing abnormal. In eighteen months sight was recovered, chiefly through rest and the hypodermatic use of strychnine. He had another rheumatic attack associated with which was insomnia, cerebral irritation, and severe brachial neuritis. Still later he had a transient attack of left hemiplegia, and later yet he was attacked with paralysis, anesthesia, and pain and tenderness in both lower extremities, although the condition was much more marked on the left. He finally developed symptoms of marked cerebral implication including total insomnia, refusal to take medicine, quasidelusions and great loquacity. He improved under rest, the use of morphine and other preparations of opium, digitalis, and careful attention to diet. In a paper published in 1892 (*International Medical Magazine*, Feb., 1892) on multiple neuritis and some of its complications, Dr. Mills refers to the psychical symptoms in several cases. In one case of typical alcoholic polyneuritis in a middle-aged woman, the mental condition was one of dullness, forgetfulness and emotionality, with a tendency both to delirium and to somnolent attacks. In another case, that of a young man with the history of alcoholic and other dissipation, the patient, after a debauch, had diplopia, unilateral ptosis, marked tremor of the hands, and a staggering gait, with at first a little delirium of a motor kind, and some delusions of exaltation. He had marked ataxia of both upper and lower extremities, associated with multiple neuritis, especially marked in the latter. Mentally he exhibited from time to time alternations of stuporous, apathetic and excited states, with a constant undercurrent of hallucinations and delusions; occasionally he showed a tendency to violence. It may be noted in this connection that Dr. Mills pointed out (*Medical News*, v. 52, March 31, 1888) the concurrence of multiple neuritis in connection with epidemic cerebrospinal meningitis.

THE CONSOLIDATION OF THE NEW YORK MEDICAL JOURNAL AND THE PHILADELPHIA MEDICAL

JOURNAL. The editorship of the above named two journals, is held by Dr. Frank P. Foster, whose scholarship and linguistic accomplishments are well familiar to the medical profession. We wish this consolidated Journal long life and prosperity.

According to the present federal law, immigrants becoming insane within three years after landing in the United States may be returned to their respective countries (*Medical Record*, June 27, 1903.)

OBITUARY.

DR. ISAAC N. LOVE.—The sudden death of Dr. Isaac N. Love has shocked the medical world. Coming into port on the steamer *Aurania*, of the Cunard line, Dr. Love, while delivering a speech at the breakfast table, June 18, staggered and fell to the floor. He died within a few minutes. Dr. Love came to New York from the West and at once became popular. He was a member of the leading medical societies and associations as well as of many prominent clubs. Representatives of these various societies and clubs paid tribute to his memory at the funeral services that took place in the St. Paul's Methodist Episcopal Church.

DR. WOLDEMAR DE DEKTEREFF: We sorrowfully record the sad news of the death of our colleague and collaborator, Dr. Woldemar de Deketereff. He had a true conception of the role of medical science in the history of man and tried to apply it practically wherever it was feasible to do so. His geniality, sincerity and simplicity of manner endeared him to his friends and all who came in contact with him. He was a favorite not only with his colleagues but also with his Government at St. Petersburg. He was a member of various municipal organizations and was entrusted by the *Conseil Municipal* of St. Petersburg with the edition and translation into the French language of the *Guide Medical* of Russia. He leaves a widow, to whom we extend the expression of our deepest sympathy and condolence.

COMMUNICATIONS.

DR. E. LUGARO, of the *Psychiatric Laboratory of Florence*, favors us with the following information:

"The hospital for the insane of Florence is composed of two large establishments: One is situated in San Salvi, a suburb of the city, and the other is near Signa, some twelve kilometres outside of the city limits. The latter establishment is an old palace, Castel Pulci, and about 450 chronic patients are housed in it. The principal establishment—that in which the Psychiatric Clinic is conducted—is called San Salvi.

San Salvi is composed of the following departments:

1. The asylum properly speaking.
2. The Psychopathic Clinic and Laboratory.
3. Wards for men and women.

The asylum is composed of twelve separate pavilions, connected by corridors of communication. Six of these pavilions are used for men and six for women patients. The six pavilions are respectively divided as follows: Two for quiet patients, two for the semi-excited patients, one for noisy patients and one is used as an infirmary. There is a separate administration building, physicians' quarters, a building for general service (kitchen, dispensary, storerooms, etc.), and engine and electric light houses. About 800 patients are housed in the pavilions.

The Psychiatric Clinic holds patients for observation. All newly admitted patients are brought to the Clinic, where they are kept some time and are eventually transferred to the pavilions. Annually there are about 800 patients admitted to the Clinic.

The medical staff of the Clinic consists of five physicians and the Director, who is at the same time Director of the asylum. There are two permanent assistants and three free assistants. These physicians devote their time to scientific research in the laboratory, to clinical research necessitating laboratory investigation of patients of the entire establishment and they have charge of the autopsies.

Besides the above mentioned physicians, there are two more outside physicians and three students who devote their time to laboratory work.

The laboratory is a separate two-story building, with basement and garret. On the second floor are the autopsy rooms, three rooms for chemical research, two rooms for vivisection and physiological research. On the first floor are situated: The library, the bacteriological room and four rooms for microscopic research. In

the basement are the photographic rooms and compartments where animals are kept for experiments.

The architectural construction of the Clinic is as follows: A central building and two lateral wings. The administration rooms, the physicians' quarters, the Clinic and School are situated in the central building; each of the lateral wings contains wards for some thirty patients. Each wing has rooms for five noisy patients. The attendants' rooms are in the same building.

An attempt is being made to enlarge the building of the Clinic, so that each wing may hold sixty patients."

Florence, Italy. February 26, 1903.

DR. CAPRIATI, of the *Royal University of Naples*, favors us with the following interesting information:

"In Italy, the study of psychiatry is obligatory for the medical students at the *Royal University*.

In the *Royal University of Naples*, the professorship of psychiatry and neuropathology is filled by Professor L. Bianchi. A special building is used as a Psychiatric and Neuropathological Clinic. It is spacious enough to house thirty insane and neuropathic patients. At present, the two Clinics are separate: The Neuropathic Clinic is in the University Institute (S. Andrea delle Dame), while the Psychiatric Clinic is outside of the University, annexed to the *Naples Provincial Hospital for the Insane*.

The present Neuropathological Clinic is large enough to hold ten patients. Patients from the *Provincial Hospital for the Insane* are used for psychiatric instruction. This hospital is large enough to house eleven hundred patients.

To the *Psychiatric Clinic* is annexed the *Psychiatric Institute*. It owes its existence mostly to the efforts of its Director, Professor Bianchi, and has been in operation since 1882. In this Institute provision is made for various researches, such as histological, bacteriological, psychological, chemical, photographic, electric, etc.

The official organ of this Institute is a periodical called *Annali di Neurologia* that has already attained its twentieth anniversary.

The most progressive methods are used in the Neuropathological Clinic: Hydrotherapy, kinesitherapy, electrotherapy. Roentgen ray treatment, etc. There is also a photographic room.

There is an out-door department, in which clinics are held three times a week. At times, these dispensary patients are used for clinical demonstration.

The medical staff of the clinic consists of a Director (Professor

Bianchi), two subdirectors (Drs. Capriati and Colucci), and two assistants (Drs. Fragusto and La Pegna).

The present Hospital for the Insane of Naples is used provisionally. A new hospital has almost been completed and is called *Manicomio Provinciale di Napoli*. The cost of this new structure amounts, thus far, to 2,400,000 lire and is most modern in construction. It is hoped that the patients from the old asylum will soon be transferred to these new quarters, where provision has been made for the housing of eleven hundred patients.

The medical staff consists of a Director (Professor Bianchi), a vice-director, a pathologist, a surgeon, two chief physicians, four physicians and four assistants. There is one attendant to every ten patients. Some Sisters of religious orders are also employed for conducting the various services of nursing and work.

Naples, Italy. February 8, 1903.

NEWS NOTES FROM EUROPE.

It is almost impossible to give, in a short sketch, an adequate idea of the activity of our Italian colleagues in the domain of psychiatry. It should be taken for granted that this description of their work is only a hasty and superficial one—aiming to give some general outlines rather than details of the progress in the psychiatric science in some Italian cities.

FLORENCE.—It is hardly necessary to make any complementary remarks to the description of the work done in Florence given by Dr. Lugaro and published in this Journal, except to say that he is as modest in his personality as he is in his writings: he is an incessant worker, has made considerable progress in the study of cellular pathology and is the editor of one of the finest scientific publications in Italy—the *Rivista di Patologia Nervosa e Mentale*—that owes its existence to Professor Tanzi. Florence boasts of a large number of psychiatric publications, some of which are *Lo Sperimentale* and *Rivista Mensile di Psichiatria, Antropologia Criminale e Scienze Affini* (Dr. Penta). Psychiatry is an obligatory branch of study in the medical department of the Royal University. Access to the hospitals for the insane and the laboratories is free to students in this branch of science. An inquiry regarding the advisability of having "single" management of the hospitals for the insane met with a vigorous disapproval on the part of the scientific workers. When the question was put to these men, they invariably replied by another question: "What would become of the scientific work?"

ROME.—Rome, like all the other large Italian cities, is most prominent in the progress of psychiatry. The *Hospital for the Insane of Rome* is an old structure, situated upon a hillock that commands a splendid view of the principal parts of the city, especially of St. Peter's, the Vatican and Castel S. Angelo. The building is a palace of olden days, and some of the rooms still bear traces of artistic and architectural refinement. The most hygienic looking wards, however, are those in the newly constructed wings. The new structures, here as elsewhere in Italy, are particularly hygienic in their looks: the abundance of tile, or marble floors, the high ceilings and the large windows that admit plenty of air and light, are particularly pleasing in aspect. Electric light and electric machinery are largely used in these institutions. A number of religious Sisters are employed as attendants on the wards and in the work shops. The Director of this hospital, Professor Clodomiro Bonfigli, is greatly respected by the profession for the various reforms he has instituted in the management and housing of the insane. Dr. Nicola Majano, one of the physicians of the hospital, took great pains in calling my attention to the various details described here. He is a fine clinician and devotes his spare time to laboratory work. The laboratory is directed by one of the foremost men in Italy—Professor Giov. Mingazzini. Sign. Achille Orlando has charge of the technical work of the laboratory. The question regarding "single" management was asked here as elsewhere, and it met, as elsewhere, with a similar answer by a question: "What would become of our scientific work?"

At the University of Rome, a course in psychiatry is also compulsory for medical students. Instruction in this science is given in the *Psychiatric Clinic*, situated quite near the hospital for the insane, but existing independently of it. When necessary, patients are taken from the hospital to the clinic for the purpose of clinical demonstration. Many distinguished men are connected with this Clinic: Professors Mingazzini and Sciamanna, Drs. Cerletti, Guidi and others. Splendid work is being done in the laboratory of this Clinic. It contains departments of histology, neuropathology, experimental physiology, biological chemistry, etc., etc. The official publication of this laboratory is called *Annali dell' Istituto Psichiatrico della R. Università di Roma*. Professor Sciamanna is the Director of this publication.

Professor Sergi is active in anthropological work and the "silver-tongued" Enrico Ferri is the representative student of criminal anthropology. *La Scuola Positiva*, directed by him, is a fine publication dealing with questions of criminal anthropology.

When he lectures at the *Royal University*, the amphitheatre is actually crowded to suffocation.

NAPLES.—Dr. Vito Capriati has given a concise description of the psychiatric institutions in this city. The question regarding "single" management of hospitals for the insane met with its usual fate: it was considered inconsistent with scientific progress.

From the *Journal of Mental Science*, Jan., 1903:

1. THE ALKALINITY OF THE BLOOD IN MENTAL DISEASES.—Dr. ROBERT PUGH: The alkalinity of the blood is physiological in chronic mania, melancholia and dementia.

It is lowered in cases of mania, during the period of excitement.

It undergoes marked variation in epilepsy, e. g.:

1. It is below normal during the interparoxysmal period.
2. It undergoes a sudden and pronounced fall immediately prior to the onset of the fit.
3. It undergoes a further diminution after the fit is over. This after-diminution depends on the length of time, the severity of the muscular spasm and the degree of the alkalinity in the interparoxysmal period.
4. There is a gradual return of the blood to its normal alkalinity, that takes place in from five to six hours.
5. There is a relationship between the degree of the alkalinity and the onset of fits, e. g., the higher the alkalinity the less liable is the patient to have a fit.
6. It is impossible to elevate and to maintain the alkalinity within physiological limits for any appreciable length of time by the administration of drugs.
7. It undergoes a diminution in dementia paralytica. This diminution is constant and well marked and is probably due to the products of neuronc degeneration in the circulation. The variations in the diminution met with depend on the type, progress and duration of the disease.

2. THE ABNORMALITIES OF THE PALATE AS STIGMATA OF DEGENERACY.—Dr. E. H. HARRISON: Abnormalities of the palate are common in the insane.

These abnormalities may be roughly classified into two large groups, of which one contains the palate of the hereditary psychopath and the latter the palate of the general degenerate.

The palate belonging to the first group is variable in its general type, but as a whole it is shallow, or, at any rate, of the average depth in front.

The palate of the second group is also variable in its general type, but is in the main characterized by an increased depth at the level of the first bicuspid.

3. INSANITY FROM HASHEESH.—Dr. JOHN WARNOCK: An interesting historical sketch of the use of the drug is given and the conclusion is as follows: The use of Cannabis Indica in Egypt seems to have graver mental and social results than in India, and is responsible for a large amount of insanity and crime in this country.

BACTERIOLOGICAL AND CLINICAL OBSERVATIONS ON THE BLOOD OF CASES SUFFERING FROM ACUTE CONTINUOUS MANIA.—Dr. LEWIS C. BRUCE:

If these blood observations are correct, they practically prove that acute continuous mania is an acute infective condition and that when recovery takes place a condition of immunity is established.

They prove that, although the patient apparently recovers, the disease remains latent; hence the persistent leucocytosis, a point that might be of great importance in life insurance examinations.

An examination of the blood is a valuable aid to prognosis.

Suppose a case of mania has lasted for a month and remains maniacal and sleepless. The blood examination gives a leucocytosis of 14,000 per c. mm. of blood with a percentage of 60 or below 60 of the multinucleated cells. The chances of an immediate or early recovery are poor. On the other hand, if the blood examination gives a leucocytosis of 18,000 or 20,000, with the multinucleated cells in a percentage of 70 or above 70, the prognosis is good. It is as well, when examining the condition of the blood to aid prognosis, to examine the blood at least two consecutive days. (*The Journal of Mental Science*, April, 1903.)

MORTALITY FROM SUICIDE.—According to *American Medicine*, Dec. 20, 1902, the following report is made in the United States census: The total number of deaths due to suicide during the census year was 5,498, of which 4,313 were males and 1,185 were females. The proportion of deaths from this cause in 1,000 deaths from all known causes was 5.5, while in 1890 it was but 4.5. Shooting was by far the most popular method of ending life; poison and drowning were resorted to in the order named. Suicide is on the increase, especially among the married males.

The death rate of married males, from 15 to 44 years of age, was greater than in unmarried males. After 45 years of age the rate was much greater among the unmarried males. In females, unmarried, between 45 and 64 years of age, the rate of

death from suicide was greater than of those married or widowed. Males between 35 and 39 years were in the majority of those who committed suicide during the census year of 1900, while among women the greatest number who killed themselves were between 20 and 24 years of age. Summing up the results in 50 of the largest cities of the United States, it appears that the average number of suicides in 1890 was 12 per 100,000, while in 1901 it had grown to 16.6. San Francisco has the largest ratio,—39.1 per 100,000 of population. Next comes Los Angeles, with a ratio of 29.8. Then follow Chicago, Milwaukee, New Orleans, Cincinnati, New Haven, Rochester, Indianapolis, Philadelphia, Pittsburgh, then Baltimore, and Greater New York, which has only a ratio of 13.6.

THE NEW JERSEY STATE VILLAGE FOR EPILEPTICS

—DR. WEEKS is the superintendent of the village for epileptics and he makes an encouraging report on the utility of colony life for these patients. Skillman village is the name of the colony for epileptics. The total population of the village is at present seventy-five patients. The superintendent estimates that there are about 2,500 epileptics in New Jersey. Thus, only an insignificant percentage of the total number can be accommodated in the village (*Medical Record*, Dec. 20, 1902).

CONTRIBUTION TO THE STUDY OF THE GENESIS OF PSYCHO-MOTOR HALLUCINATIONS.

—N. Vaschide and C. Vurpas make an intimate study of the genesis of psychomotor hallucinations and conclude that the mechanism of this mental disturbance is closely connected with delusional introspection on the subject of spoken language. (*Archives de Neurologie*, June, 1902).

CONTRIBUTION TO THE STUDY OF VERTIGINOUS EPILEPSY AND ITS TREATMENT WITH BROMIDE OF CAMPHOR.

—Drs. Bourneville and Ambard publish the results of their clinical experiments with bromide of camphor in cases of vertiginous epilepsy. The clinical histories are carefully tabulated, showing most satisfactory results from the said treatment. The authors claim that this treatment is also used to advantage in various other forms of disturbances of the nervous system. Hydrotherapy is used as an adjunct to this treatment (*Archives de Neurologie*, No. 79, 1902).

FIVE CASES OF CONJUGAL GENERAL PARALYSIS.

—Drs. Kereval and Raviart, publish five cases of conjugal general

paralysis. They lay much stress on the fact that syphilis was the cause of general paralysis in some of the conjugal cases here considered; they remark, however, that it is not always easy to determine whether syphilis is the responsible cause of conjugal general paralysis. In the cases which had no syphilitic history, the authors found that alcoholism, cranial traumatism, heredity and moral influences were the causes of the disease of conjugal nature (*Archives de Neurologie*, June, 1902).

THE PRESENCE OF A PARASITE IN THE BLOOD OF EPILEPTICS.—Dr. Bra found the presence of a parasite in the blood of epileptics, immediately preceding or following the attacks. He made his researches on patients in Dr. Magnan's and Marandon de Montyel's services. In all, he examined seventy patients. He gives photographic pictures of this parasite found in the blood (*Archives de Neurologie*, No. 79, 1902).

From the Medical Record, October 4, 1902:

1. Suicide in Germany.—The total number of suicides in the German Empire recorded in 1900 was 11,393. Of these, 8,987 were males and 2,606 females; the proportion of male to female subjects is 100: 26.8. Within the last decade there were 108,494 suicides; the proportion of the male to the female sex in this instance was 100: 26.3. In 1900, the statistics showed a proportion of 20.3 suicides to one hundred thousand inhabitants. These data are extracted from the *British Medical Journal*

2. PROFESSIONS AND LUNACY.—A French investigator is credited with having drawn the following conclusions regarding the susceptibility of men of various professions to mental alienation: Brains of naval and military men give out most quickly. Out of one hundred thousand men of the army or of the naval profession, 199 are hopeless lunatics; of the liberal professions, artists are the first to succumb to mental strain; next follow the lawyers, doctors, clergy, literary men and civil servants. On the average, this group of men furnish 177 insane out of one hundred thousand subjects.

CONTRIBUTION TO THE PATHOGENESIS OF EXOPHTHALMIC GOITRE.—Dr. Ettore Tedeschi draws the following conclusions from his experiments on the pathogenesis of Basedow's disease:

In animals, lesions of the restiform bodies, especially in their anterior parts, produce noticeable symptoms of Basedow's disease.

When the symptoms artificially produced, as above indicated, have disappeared they can be made to reappear by means of hyperthyroidization.

After total extirpation of the thyroid body, section of the restiform bodies does not produce symptoms of Basedow's disease.

After section of the restiform bodies, partial or total extirpation of the thyroid body decreases the severity of the symptoms of Basedow's disease or may even completely ameliorate the condition (*Rivista di Patologia Nervosa e Mentale*, Vol., VII, Fasc. 6, 1902).

From the Medical Record, November 1, 1902:

1. INSANITY AND THE NEGRO.—According to Mr. L. Perry, the increase of insanity among the negro population in the State of Georgia is most marked. The population has doubled within the last forty years, while the number of insane has increased twenty-fold within the same period of time. The author thinks that there is every reason to fear a continuous increase of insanity among this population. He sees the reason of this unusual increase of insanity in the invalidity of the negro's brain: at the time of his civil emancipation in the United States, the negro's brain was not so highly developed as was that of the white man. Consequently, the negro cannot stand the stress of life as easily as does the white man.

2 TREATMENT OF UNCONSCIOUS PATIENTS BY AMBULANCE SURGEONS.—The Health Department of Brooklyn issued an order directing ambulance surgeons to take all persons suffering from partial or from complete unconsciousness to the nearest hospital; this order is to be carried out even when the patient shows signs of being under the influence of alcoholism.

This action on the part of the Board of Health is the outcome of an unfortunate mistake in diagnosis by an ambulance surgeon. He was called to attend to a man who was unconscious as a result of being knocked down by a trolley car and the physician diagnosed the case as being one of alcoholism. The man was locked up. As he failed to regain consciousness, he was transferred to a hospital, where he died of the cause of his unconsciousness,—a fractured skull.

COLONIES FOR THE INSANE.—The Massachusetts Board of Insanity has started the foundation of a co-operative colony, where mildly insane cases can do work on a self-supporting principle. The colony is located near the townships Gardner,

Westminster, and Ashburnum. Work is to be begun with fifteen cases and suitable buildings are to be erected, where several hundred cases can be housed (*New York Medical Journal*, October 25, 1902).

THE RELATION OF NEURALGIC HEADACHES TO STORMS.—DR. S. WEIR MITCHELL: According to a chart of a patient showing the occurrence of migraine in relation to stormy weather, it is learned that March and April are the worst months and October and February are the best (*American Medicine*, June 27, 1903.)

ON THE TYPHOID PSYCHOSES.—DR. CLARENCE FARRAR: Typhoid fever attacking a sane person may leave him free from physic symptoms or give rise to all gradations of mental disease. The severity of the symptoms does not necessarily stand in relation to the height of the fever or the profoundness of the infection. Persons of psychopathic heredity are more prone to alienation, especially initial delirium, than are those free from psychiatric taint. A protracted exhausting fever predisposes to an asthenic psychosis. A second or third attack of typhoid is more likely to cause mental troubles than is a first. *Initial delirium* is the rarest form, exhibits the most rapid course and the prognosis of this form of mental disturbance is bad, over 50 per cent. ending fatally. This form is essentially the expression of severe intoxication. The Nissl findings confirm this view. Any case of mental derangement with fever justifies the suspicion of the presence of typhoid fever. The *febrile psychoses* are of the greatest frequency, but their prognosis is good. Twenty-five per cent. of these cases persist for varying lengths of time and may extend into the period of convalescence. They are especially due to the elevation of temperature and its consequences. With the exception of cases suffering from isolated delusional conceptions and from typical collapse delirium, the asthenic psychoses are of long duration and of doubtful prognosis; serious cerebral changes are characteristic of these psychoses; exhaustion, anemia and malnutrition are its underlying causes.

The intercurrent of typhoid fever in cases suffering from psychoses may cause an amelioration in or recovery from the psychoses. The metabolic revolution proper to acute febrile diseases may be responsible for this clinical fact.

The typhoid psychosis is not distinctive anatomically or clinically. A low psychic resisting power predisposes to psychoses during typhoid fever (*American Journal of Insanity*, July, 1902.)

BOOK REVIEWS.

GESCHLECHT UND ENTARTUNG. DR. P. J. MOEBIUS. Card Marhold, Halle, a. d. S., 1903. The author considers the various sexual aberrations of the hereditary degenerate properly speaking. He speaks of the different varieties of these aberrations and gives some figures indicating the proportion of such subjects in men and women. According to the author, the greatest evil caused by these subjects is the small rate of childbirth and the degeneracy of the children whom such parents bring into the world. Some consideration is given to the legal dealings with a certain variety of sexual perverts. The older the nation, the author says, the greater the number of sexual degenerates. Heredity and alcoholism are the main causes of these troubles. Heredity perpetuates and alcoholism increases these evils. Among the various other causes of these diseases are: Venereal affections, mal-nutritions, infections, etc. Heredity and alcoholism, however, are the main causes. The author deplors the fact that the law is ever ready to inflict punishment on the mother who steals a bread to feed her hungry children, but it shrugs its shoulders and cries "privacy of individual life," when brought face to face with syphilitic and tubercular patients who are apt to give birth to degenerate children. Struggle against popular alcoholism should energetically be pursued.

UEBER DIE SOGENANNT "MORAL INSANITY." DR. P. NAECKE, *Physician in Chief*, Hubertusburg Hospital for Insane, member of many psychiatric and anthropological societies. J. F. Bergmann, Wiesbaden, 1902. Prichard was the first physician to coin the term "moral insanity." Interesting chapters are devoted to the consideration of the history of this classic term, psycho-sociological study of the disease, its special symptomatology, classification, pathogenesis, the analogy of moral insanity to other psychoses, the etiology, course, diagnosis, prognosis and treatment of the disease. From a medico-legal standpoint, the psychically sick, properly speaking, who commit immoral acts should not be punished by law, but should be treated in appropriate institutions for the insane. The patient's understanding of right and wrong should not be considered by law as a criterion of sanity. A fine bibliographical list accompanies this interesting study.

ERRATUM: The reference made on page 153, Vol. III, Nos. 4 and 5, to the eulogy on Dr. Falret read by Dr. Magnan, is a typographical error.

BOOKS AND PAMPHLETS RECEIVED.

Dr. Parker Syme. PERINEAL PROSTATECTOMY.

Dr. William G. Le Bouillier. THORACIC INJURIES INVOLVING THE LUNGS.

Dr. A. E. Gallant. THE RATIONAL TREATMENT OF MOVABLE KIDNEY AND ASSOCIATED PTOSIS.

Dr. G. M. Edebohls. RENAL DECAPSULATION FOR CHRONIC BRIGHT'S DISEASE.

Dr. Jules Morel. L'ASSISTANCE DES ALIENES.

Drs. H. Packard and J. E. Briggs. THE INVOLUTION OF THE APPENDIX. ACUTE SUPPURATIVE APPENDICITIS AS A SEQUEL THERETO. A REPORT OF A SERIES OF CASES WITH DEDUCTIONS.

Dr. H. O. Walker. GASTROJEJUNOTOMY WITH THE MCGRAW ELASTIC LIGATURE, FOR THE RELIEF OF GASTROPTOSIS.

Dr. Burnside Foster. SOME PROBLEMS OF PREVENTIVE MEDICINE.

Dr. George E. Pettey. HYOSCINE IN THE TREATMENT OF MORPHINISM; ITS OFFICE AND VALUE.

Dr. V. Capriati. RIFLESSO PLANTARE, FENOMENO DI BABINSKI E RIFLESSO ANTAGONISTICO DI SCHAEFER.

Dr. V. Capriati. DI UNA PARTICOLARE FORMA DI REAZIONE ELETTRICA ANORMALE.

Dr. Sano. VAN DOLENDE KINDEREN.

Dr. O. Fragnito. PER LA GENESI DELLA CELLULA NERVOSA.

NOTIZIE SUL NUOVO MANICOMIO DELLA PROVINCIA DI NAPOLI.

Dr. Fragnito. LE DEVELOPPEMENT DE LA CELLULE NERVEUSE DANS LA MOELLE EPINIERE DU POULET.

TRANSACTIONS OF THE ALUMNAE ASSOCIATION. WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA.

EIGHTH ANNUAL REPORT OF THE BOARD OF MANAGERS OF THE ROME STATE CUSTODIAL ASYLUM AT ROME, N. Y., 1902.

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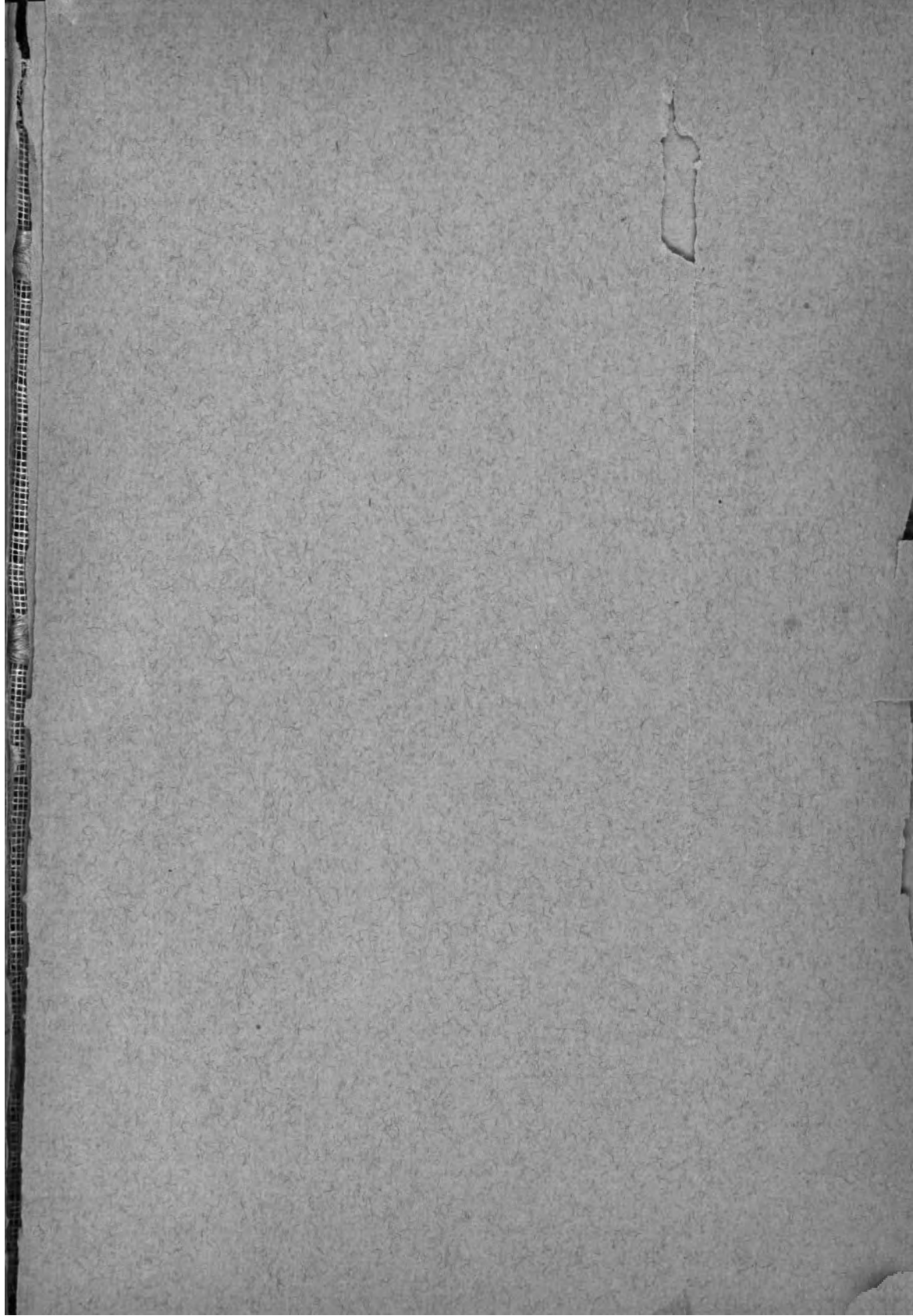
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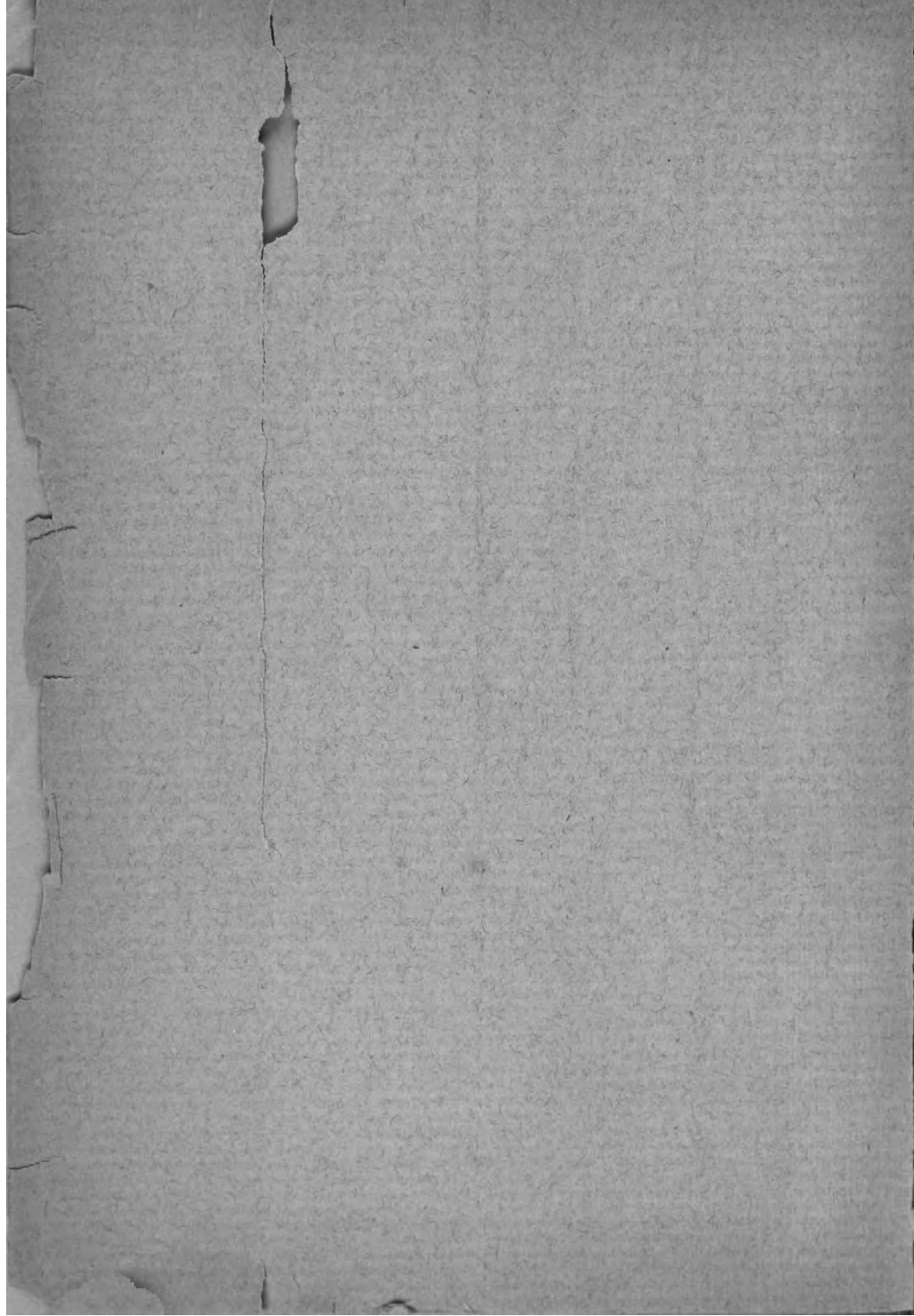
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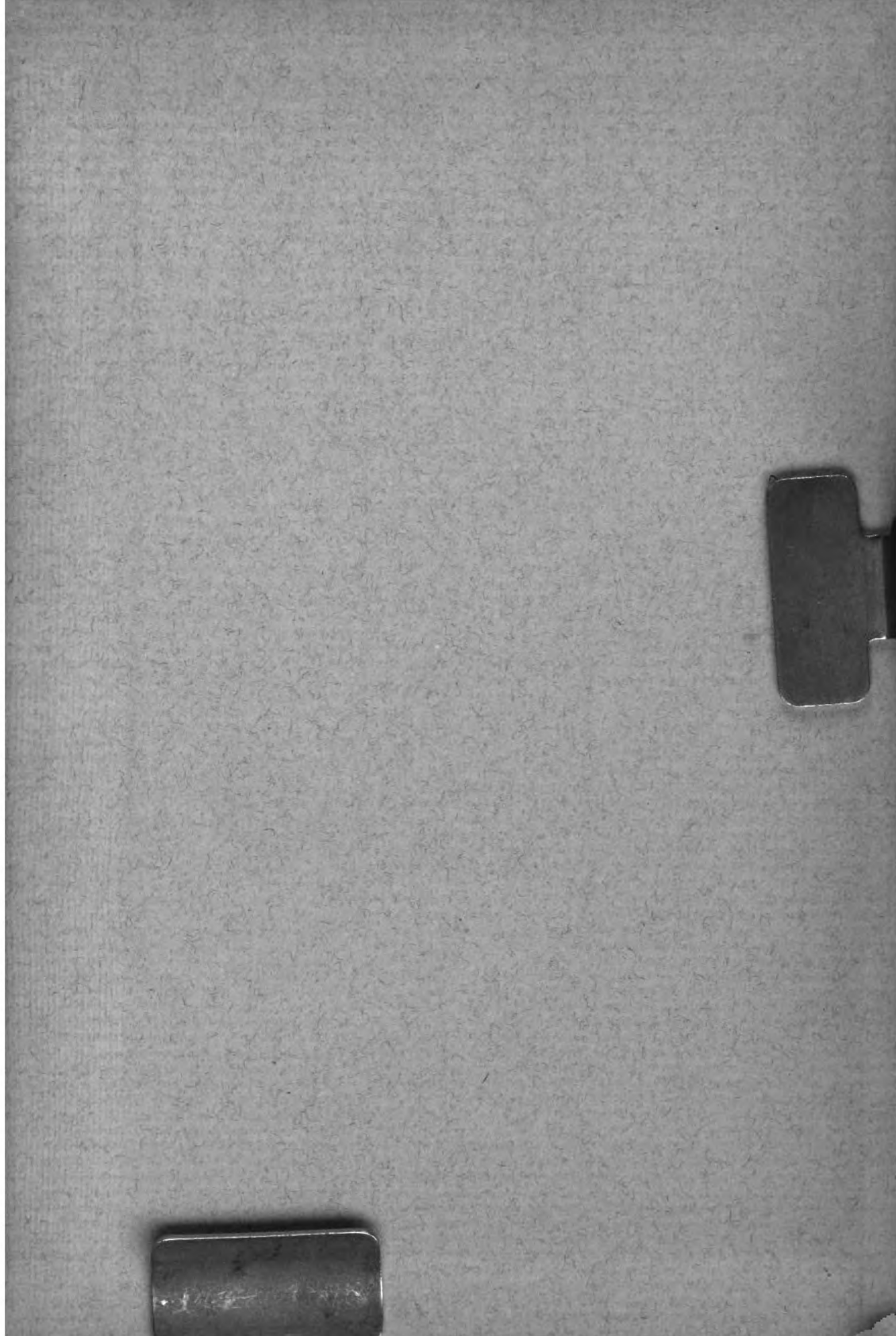
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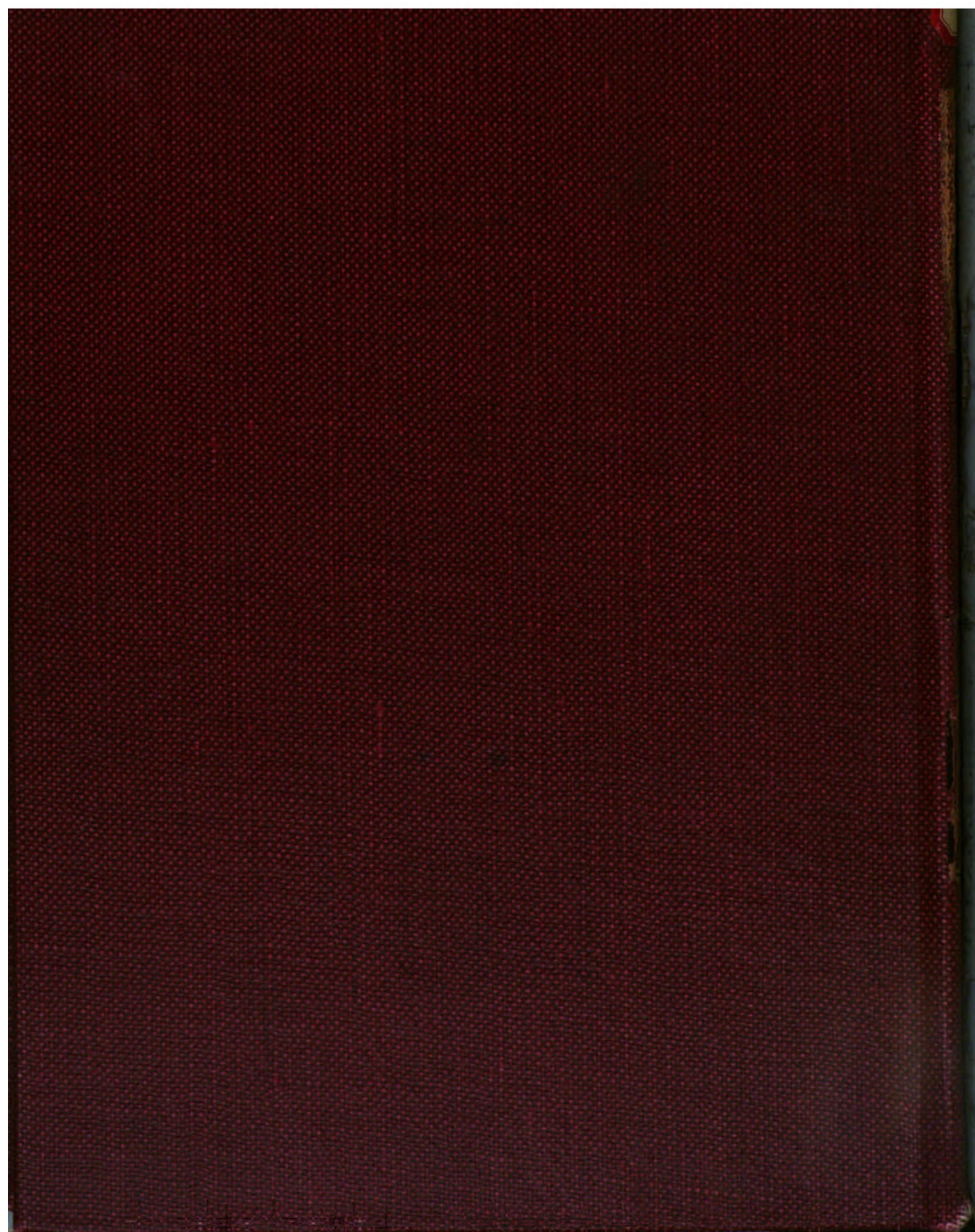
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